

# Railway Age

SECOND HALF OF 1921—No. 21

NEW YORK—NOVEMBER 19, 1921—CHICAGO

SIXTY-SIXTH YEAR

Published weekly by Simmons-Boardman Pub. Co., Woolworth Bldg., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00; single copies, 25c. Entered as second-class matter, January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



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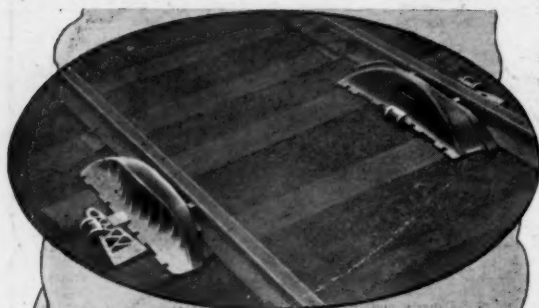
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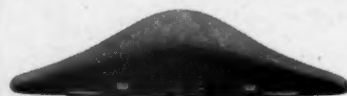
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REPLACERS WITHOUT  
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# EDITORIAL

## Railway Age

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The members of the American Railway Development Association, although they devote their attention exclusively to the development of such things as farming, live stock raising, the colonizing of unsettled lands, the improving of settled districts and the establishment of industrial enterprises, are very much a part of the country's transportation system. Traveling extensively as they do, lecturing to agricultural communities, helping immigrants to improve their conditions, co-operating with commercial clubs, chambers of commerce, college extension departments, marketing associations and other agricultural and business organizations, these men are in a most strategic position through their personal contact with the public to establish good-will towards the railroads. Theirs is an opportune position and an immensely worthwhile mission.

### Developing Goodwill Toward the Railroads

The New York, New Haven & Hartford, in September of this year, inaugurated a tractor and trailer system at two of the outbound houses in its Boston freight terminal where the maximum haul rarely exceeds 100 ft. This installation, and the methods of handling the freight, are described in detail on other pages of this issue. It will be noted that the tractors were employed only after the congestion, which, years ago, had been relieved by the substitution of manually operated four-wheel trucks for the usual two-wheel trucks, had again become acute. The underlying conditions—the necessity of handling through 20 doors to the cars all freight received from the driveway side through 52 doors—which led to experimenting with tractors at this point are approximated at the outbound houses of many other railways. The success that the New Haven has had in reducing delays to shipments as well as the reduction in the cost per ton of handling freight at Boston, through this radical departure from usual methods, may well point the way for like economies at the outbound houses of other roads where conditions are somewhat similar.

### Tractors and Trailers for Short Haul

The London School of Economics is doing a remarkable work in training promising railway employees in the larger aspects of the railway business. A wide range of interesting courses in railway economics, operation, law and accounting is offered and classes are held for the most part in the early evening in order not to interfere with the students' regular work. Such educational facilities can only prove effective when there is hearty co-operation on the part of the railways whose employees are to be trained. When the students realize that the officers of their companies are interested in their efforts to become of greater service and are watching closely the records they are making in their studies, the effect is that they derive the utmost benefit from the opportunities afforded them. Trained men are as necessary to the railroads of this country as to those of England. There has been much discussion on the place of college men in the railroad organization. Does not this English plan offer a possible solution? That is to say

### England and Railway Education

that making college men out of railroad employees ought to be at least as feasible as making railroad men out of college students. Practically all of the larger cities of the country have their institutions of higher learning which could be made available during certain hours of the day for the instruction of ambitious railroad men. All that remains is for some one to take the initiative. The success of the movement in England proves its feasibility.

The analysis of the authority and responsibility of the federal government in the case of a railroad strike, made by James C. Davis, director general of railroads, in an address at Kansas City and published elsewhere in this issue, is of particular interest in view of the experience through which the nation

### Strike Powers of the Federal Government

has recently passed, because (although he does not say so in the speech) it is an exposition of the legal theory on which the Harding administration was preparing to deal with the strike if it had not been called off. Mr. Davis shows clearly how the lack of "teeth" in the labor provisions of the Transportation Act, which many have deplored, may be supplied readily from the general powers to protect the interests of the public, which the government has been declared to possess by the Supreme Court decisions in both the Debs case and the Adamson law case. While the Transportation Act provides no penalties for violation of the orders of the Railroad Labor Board, Mr. Davis shows clearly how the new law has made a strike against the orders of the board an act against the government rather than against the corporations and how the Department of Justice may, as it was actually prepared to do in this case, proceed against the leaders of a strike by the injunction process and if they fail to obey the injunction arrest them for contempt. Mr. Davis' explanation of the legal points involved is of particular significance because there was no clear public explanation given at the time of the policy which the government proposed to follow if it became necessary. The fact that the Labor Board was first used as a mediator, and that the brotherhood leaders were given an opportunity and a plausible reason for withdrawing their strike order before the Board issued its order forbidding a strike left some confusion at the time in the public mind as to whether the strike was settled by the announcement of the Labor Board that it could not consider further wage reductions before disposing of other cases on its docket or whether the firmness displayed by the Washington administration had thoroughly convinced the strike leaders that they had made a serious mistake.

The co-ordination of the activities of all branches of railway service makes a smoother working machine, increases efficiency and promotes economies. It is necessary in order to accomplish this to the fullest extent that a liaison be established between the division and the general officers. Some roads already have felt it desirable to study this subject and others no doubt could benefit by such an investigation. For example, on the Chicago & North Western the signal

### The Transportation Engineer

engineer acts as the chairman of a system committee, which studies such problems as the causes of delays to cars passing through terminals to ascertain where such delays occur in interchange movements or yard switching and initiates the proper steps to eliminate them. The value of such a study is obvious, particularly in a time of car shortage. Again, the location of division facilities and their effect on operation, and other subjects of like importance, may well receive careful study. On the Pennsylvania a mechanical department officer is in charge of such work. The location of terminals and classification yards presents problems which frequently cannot be solved by division officers alone, because their viewpoint is limited to their own territory, yet their recommendations largely determine the character and location of the improvements made. By proper classification at the starting point it may be found that there is no need for an intermediate classification yard and train operation may be materially benefited by its elimination. It is thus evident that the co-ordination of the activities of different departments offers possibilities which the railroads can well afford to develop. The man assigned to such work may well be called a "Transportation Engineer." Such a man should have broad vision and an analytical mind as well as a general fund of knowledge pertaining to the work of the various departments. Thus equipped, and reporting direct to the president or vice-president, he should be in a position to produce results not possible by the busy general or division officer, provided, of course, that he is permitted to devote all of his time to his work and is given a competent staff of assistants.

Closely allied with the question of order and cleanliness in railroad repair shops is that of scheduling various repair operations. In fact the same factors

#### Why Schedule Shop Work?

which stimulate certain managements to keep shops clean, orderly and well lighted, also cause them to install schedule or routing systems whereby the order of detail operations is known in advance and confusion avoided. The converse of this statement also is true. It is significant to note that almost invariably the dirty, congested shop has no schedule system and, with the possible exception of a weekly calendar of outgoing cars or locomotives, has no means of knowing in what order work will be needed. Unfortunately there are still many shops of this latter type and the truth of the matter is that these simply reflect the individual preferences of higher shop and mechanical department officers who fail to appreciate the value of systematic, planned work. A shop schedule system is not difficult or expensive to install and time and again its installation has been promptly followed by important increases in shop output. It is time that every important railroad shop in the country should be provided with a shop schedule fitted to its individual needs. Not only should ordinary repair operations be scheduled, but many shops handle a large amount of miscellaneous machinery repairs and outside work which also should receive the attention of the schedule supervisor, to be handled in order of its importance, thus interfering with the regular work as little as possible. Shop orders are generally issued for work of this kind, and it is to be hoped that not many shops handle these orders in the haphazard manner recently noted by a visitor at one point. The shop in question was badly congested with new work, general locomotive repairs, and outside machinery repairs to be done on shop orders, and the only guide for under-foremen and shop employees was the weekly calendar of outgoing locomotives. Impressed with the congestion of machinery, stock and unfinished machine parts, the visitor asked a foreman how he knew which shop order to work on first. The reply was, "We wait until somebody needs the order so much that he tele-

graphs for it." Is any comment on such a practice necessary? It is earnestly believed that a simple, workable schedule system applied in this shop under the direction of a capable schedule man and backed by the general foreman and shop superintendent would relieve the congestion in a short time, increasing the output and enabling shop orders to be completed in a reasonable time, without the formality of a telegram to start work on them.

## A Recent Wage Decision of the Labor Board

THE DECISION recently rendered by the Railroad Labor Board in the controversy between the New Orleans Great Northern Railroad and the organizations representing its telegraphers and train service and shop employees seems to be of much significance. It seems significant not only because of the wage reductions authorized, but also because of the reasons given for authorizing them.

The wages of the train and engine service employees were reduced to the same amounts that they were on March 1, 1920—that is, when the railways were returned to private operation. This is what the railways intend to ask the Labor Board to do with respect to the wages of all train and engine service employees. The wages of shop employees were even more sharply reduced. According to statistics given by A. O. Wharton, a member of the board, in a dissenting opinion, the new wages of the shop employees are 30 to 40 per cent less than those fixed for them by the board in Decision No. 2 on July 20, 1920.

The board authorized larger reductions in the wages of shop employees than in those of train service employees, apparently because the increases granted to the former were relatively larger. It authorized relatively larger reductions in the wages of comparatively unskilled than of skilled employees, partly, no doubt, because the former were given larger increases and partly because it believed that the differentials between skilled and unskilled workers ought to be larger.

The board said it was "sympathetic with the principle that the ability of the carrier to pay is not a controlling factor, but recognizes that it is entitled to secondary consideration with a certain type of carrier dependent almost entirely on local business or whose principal function in the final analysis is the development and upbuilding of a new, or comparatively new, country." This is the situation of the New Orleans Great Northern, which it was shown has been operating at a heavy loss. In spite of the guarded language used by the board, however, its statement is clearly a recognition of the principle that a road's earning capacity is one of the "relevant circumstances" which must be considered in determining what wages it can be required to pay. Now the Transportation Act makes no distinction between railways serving only a few communities and railways serving many, and if this principle is applicable to one railroad then it is applicable to all.

The board gave weight to evidence "that the cost of substantial necessities, i. e., groceries, meats, dry goods and wearing apparel, March, 1921, as compared with July, 1920, shows an average decrease of 30 per cent" in the territory of the New Orleans Great Northern. It added the following significant statement: "It is a matter of common knowledge that in the territory served by this carrier the question of rent does not bear the same excessive relation to the living budget as is evidenced in large centers, and it is worthy of note that none of the employees here involved are required to live in large centers." It said that the wages authorized by it for the shop crafts and roundhouse labor are "substantially higher than paid in other industries," but that

"special consideration has been given to the rates paid for similar service in other industries in the centers where the carriers' men are employed."

The result of the weight given by the board to this railroad's earning capacity and to the cost of living and the wages paid in other industries in its immediate territory was a decision authorizing the payment to all the classes of its employees involved of wages substantially lower than those being paid to employees doing the same classes of work on other railways.

The precedent established may mean one or both of two things: First, it seems to mean the board recognizes the principle that railway wages should not be standardized throughout the United States, but that as nearly as practicable they should be adjusted according to the cost of living and the wages paid in other industries in the various communities in which the employees live and work. This is a healthy sign since nothing is more needed, in justice to the employees, the railways and the public, than the breaking down of the present arbitrary standardization of wages throughout the country regardless of local conditions. Secondly, while it cannot be taken to indicate the board believes the wages of all employees should be reduced, it certainly does suggest the inference that when the railways generally bring new wage cases before the board it will not be found entirely inhospitable to the argument that railway labor costs should be readjusted downward in proportion to the need of the country for lower rates and to the changes in wages in other industries, as well as in the cost of living.

### Stop, Look and Listen!

FAMILIARITY breeds contempt. The man who does not own an automobile, or the one who is but a recent purchaser, feels a genuine concern whenever he rides over railway tracks, but this feeling soon becomes dulled and the average seasoned driver does not suffer any particular anxiety when he approaches a crossing. Eventually he becomes more or less careless or perfunctory in his observance of the ordinary rules of safety. Then there is the dare-devil who will always take a chance; nor must we forget the drunken joy-rider.

Through the combined effort, or rather lack of effort, on the part of these classes of automobile drivers we are confronted with an appalling casualty record in grade crossing accidents. The accident report of the Interstate Commerce Commission for 1920 shows that 6,868 persons were killed or injured at grade crossings, and of these 5,250 were occupants of automobiles. The investigation of such accidents and traffic studies at crossings shows that fully 95 per cent of the casualties are clearly the fault of the automobile driver. It is well known that in many of the collisions which occur at grade crossings the automobiles or trucks run into the side of trains.

This situation has long been a source of great concern to the railroads, the insurance companies and the National Safety Council. The public, on the other hand, except when aroused by some particularly gruesome accident, has taken but little interest in the subject, about the only manifestation being agitation for grade separation or for an additional safeguard at the crossing. In spite of the fact that the chief need is for greater care on the part of the driver, about the only agencies which have endeavored to promote caution are the National Safety Council and the individual railroads. Public authorities in general have had but little part in such preventive measures. It is, therefore, of particular interest to note that the state of North Dakota, through its railroad commission, is now carrying on an intensive state-wide campaign of public education. This will be directed primarily toward a greater spirit of caution in approaching and driving

over tracks at highway crossings and is the result of a series of thorough investigations of the causes of several recent collisions between trains and automobiles in that state.

This is but a start. The benefits to be secured will be measured almost directly by the extent to which other states lend their efforts to this end. There are many ramifications of this problem which cannot be solved without the assistance of the public bodies. Adequate warning signals at an effective distance from the tracks, the use of speed restricting humps and the elimination of view obstructions, are typical of matters largely within the province of the public authorities rather than the railways. But of greatest importance is the campaign for careful driving, which obviously should be much more effective when promoted by the state than when carried on in the name of the railroad.

### Why Tinker With An Inefficient Machine?

"SHOULD WE CONTINUE to tinker with an old and inefficient machine when it is impossible to escape the installation of the modern and efficient one?" This sentence is quoted from the superpower survey report. The "old and inefficient machine" referred to is the steam locomotive. The reference is but one among several like it which appear in Professional Paper 123 entitled, "A Superpower System for the Regions between Boston and Washington." The sentence is indicative of the broad-minded attitude with which the investigators of the superpower survey did *not* approach the question of railroad electrification in the so-called superpower zone.

The superpower survey report was presented to the President on November 5. An abstract of the parts of it relative to electrification appeared with editorial comment in last week's issue of the *Railway Age*, pages 862 and 881. Briefly, the report presents a plan for a correlation of the electric power units in the so-called superpower zone, included roughly between Washington and north of Boston and extending about 150 miles inland. Large expenditures are admitted to be necessary to put the several plans in effect, but the savings claimed put to shame the promises of a salesman of oil securities.

The parts of the report dealing with electrification are, of course, the ones in which readers of the *Railway Age* are primarily interested. The investigators ascertained that there are included in the superpower zone some 36,000 miles of railroad, including main line, additional tracks, sidings and yards. Of these it is shown, to the satisfaction of the investigators at least, that 19,000 miles could profitably be electrified. The electrification of these lines will cost only about \$500,000,000, but it is estimated that the savings over the present methods of steam operation will be from 11 to 19 per cent on the investment, or an average of 14 per cent per year.

It will have to be admitted that the method whereby the investigators prove that these startling savings of 14 per cent will be made is not quite as clear as might be desired. Apparently they expect almost unlimited savings in locomotive maintenance. They count further on a decrease of some 25 per cent in crew wages. They rival even the previous most ardent advocates of heavy electrification in claiming a saving in fuel of no less than 66.8 per cent.

In an editorial on the superpower survey which appeared in last week's *Railway Age*, objection was made that the report suffered from its partisanship. It is very evident that the investigators tackled the problem of electrification with a decided prejudice against steam operation. A careful perusal of the report, and more particularly of that section dealing with electrification, Appendix C, may possibly ex-

cuse them. It is only too apparent that they were not sufficiently familiar with railway operation to be at all interested in its favor. A statement to the effect that no more skill is required to operate an electric locomotive than is demanded of an ordinary chauffeur does not indicate else than a marked ignorance of railway operating conditions. The following quotation is possibly even more indicative of lack of knowledge of how our railways are run:

The reason for this reduction in crew wages per ton-mile is clear: if a steam locomotive pulls a train 100 miles in 10 hours and an electric locomotive pulls it 100 miles in 8 hours, the use of the electric locomotive will save 33 per cent in crew wages (as 2 hours of the 10 would be paid for at double-time rates); and if the train pulled by the electric locomotive is 25 per cent heavier, the saving in wages will be 46 per cent. Such a saving is easily made.

As has been said in these columns again and again, there are presumably few railway men left who do not believe that electrification is the proper development in situations suitable for it. The electrification advocates do not seem to realize that the electric locomotive has not proved itself the panacea for all the railroad ills. On the other hand, they seem to have little or no comprehension of the fact that the steam locomotive of today is a quite different motive power unit from the locomotive of a decade ago. This probably explains why they do not hesitate to compare operation with the most modern up to date electric locomotive working on mountain grades with the operation of the old steam locomotives displaced on these electrified sections.

Further than that, electrification will cost enormous sums of money. Money is not easily obtainable by American railroads under present conditions. We submit that the burden of proof is still on the electrification advocates to show that enormous expenditures will be worth while in the present state of the art of heavy electric traction. All these facts are omitted from consideration in the superpower survey report. Admitted always that electrification has proved itself worth while in the conditions suited for it, we assert that a general plan for electrification such as is proposed in this report is visionary and not sufficiently supported by facts.

The *Railway Age* has always contended that electrification must be "sold"—to use a merchandising term—not to the electrical engineers nor to the public. It must be sold first to the hard-headed practical men who operate our railways. We do not feel that such arguments as the following will get far with men who have been brought up with steam operation.

The normal amount demanded annually for extensions and betterments for the railroads within the superpower zone is approximately \$150,000,000, an amount which even in the face of present construction prices would suffice in three or four years to cover the cost of electrifying all the mileage mentioned. *Should we continue to tinker with an old and inefficient machine when it is impossible to escape the installation of the modern and efficient one?*

Possibly the following remark will appeal to steam railroad men:

These improvements in operation can be made more readily under electric service than under steam, for a change in the power system would bring fresh minds into the service and would consequently liberate the mental operations of the average railroad man from their conventional routine.

As was stated in last week's issue there is much of value in the superpower report. There is much said in favor of electric operation that is correct and fair. There is much less said of steam operation that can be so termed. The report insofar as electrification is concerned partakes altogether too much of unfair propaganda in favor of steam railroad electrification. The propriety shown in putting this propaganda in an official government document prepared with the assistance of an appropriation of \$125,000 from Congress is, however, not evident.

## New Books

*The American Railroad Problem*, by I. Leo Sharfman, Professor of Economics, University of Michigan, 5½ in. by 8½ in. 474 pages. Bound in cloth. Published by the Century Company, New York.

This book is first a summing up of recent railroad history and as such is an important contribution to railroad literature. In addition it is an able analysis of the present railway situation and in this, perhaps, lies its greatest value to the railroad man and lay reader alike. Professor Sharfman gives first a brief summary of railroad history prior to 1914 and then goes into considerable detail concerning the railroads under pressure of war, both previous to and during federal control. Several chapters are devoted to the accomplishments and shortcomings of the railroad administration and then the writer launches into the discussion of the present railroad situation. Theoretical questions of private versus public ownership, unification of service, rates, credit and earnings and the attitude of labor are dealt with from an impartial viewpoint to provide a background and then the writer takes up the Transportation Act.

The author's conclusions are interesting—"it is very questionable, therefore, whether relief can be expected through further extension of the scope of regulation. The continuance of private ownership must be accompanied by a reasonable degree of independence in management," and "unless the railroads accept the plan of consolidation now being formulated by the Commission, it will doubtless be deemed essential to render the extensive emergency powers over traffic and 'car service' continuously applicable, in order to secure the benefits of informal operating unity. Such developments must ultimately bring public ownership." With these and other statements throughout the book there will not be universal agreement, yet if such a grasp of the railway situation as Professor Sharfman has were general among the leaders of the country's thought, the railroads and their managements would find their problem greatly simplified. The book recommends itself to the attention of all who would be intelligently informed about our national railroad policy.

*Railroad Shop Practice*. By Frank A. Stanley. 331 pages, 5 in. by 9 in. Bound in cloth. Published by McGraw-Hill Book Company, New York.

The purpose of this book as outlined in the preface is to show typical methods and appliances adapted to the work of various repair shops. It contains 23 chapters, covering in a general way practically all phases of locomotive repair shop operation. Data for the preparation of the book was secured from railroads in various parts of the country and the methods shown, therefore, are not simply local. The description of methods is written primarily from the standpoint of general machine practice and in many cases the author shows lack of familiarity with railroad shop methods. The author has given little consideration to the problem of repairs in its general aspect, but has treated each operation as practically unrelated to other work. Consequently, the book is more in the nature of a collection of shop kinks than a treatise on general shop practice. A very large portion of the entire book is devoted to machine shop practice, although short sections dealing with blacksmith shop, boiler shop and car department practice are included. Some of the methods described are probably the best in their respective lines, but other methods included would be classed as obsolete in the majority of shops. The value of the book would have been increased if greater care had been taken to give each important division of railway shop work the attention which its relative importance would warrant and if more discrimination had been used in selecting the examples of shop practice described in the work.

# The Case of the Detroit, Toledo & Ironton

Between June and August Net Operating Income Declined  
70 Per Cent; For Class I Roads Increased 75 Per Cent

By Harold F. Lane

WASHINGTON, D. C.

THE INTERVIEW with Henry Ford, published recently in *The Nation's Business*, telling how he would operate a big railroad if he owned one, instead of a little one, suggests that as a railroad operator Mr. Ford is a good press-agent for the Ford Motor Company, but who is not always as careful as he might be as to his facts. But following his advice to look up in Washington some of the figures reflecting the operation of the Detroit, Toledo & Ironton, which he does not find it necessary to use in illustrating the various points made in his interview, one comes to the further conclusion that as the head of the motor company he is also a good traffic solicitor for the D., T. & I. Having such a traffic solicitor, the D., T. & I. is this year making some money, whereas last year it made deficits; but the recent reports of the road to the Interstate Commerce Commission, which apparently were not made by a press-agent, fail to maintain the same improvement in net earnings which earlier in the year filled the newspapers with accounts of Ford's "railroad miracle."

The credit which the Ford management received for the results of suddenly placing on this road a large amount of Ford tonnage was based largely on comparisons between the earnings of April and the immediately preceding months, and those of the year before when (before the general rate advance) most of the railroads of the country were showing deficits. The reports on file with the Interstate Commerce Commission show a decrease in every month since April in the net operating income, as compared with the preceding month, and for August it was lower than it was during March, the month in which the Ford management took charge. While there has been a large increase as compared with the corresponding period of the year before, before the 40 per cent rate increase of August 26, 1920, the reports show that this is largely due to the increase in gross earnings, the reduction in expenses having been only slightly greater than that made by the railroads of the United States as a whole.

## Net Lower Each Month from April to August

For the six months from September, 1920, to February, 1921, after Mr. Ford had bought the road but had not yet installed the new management, the D., T. & I. had a constant succession of deficits. For March the net operating income was \$77,985. By April the effects of the Ford traffic or the Ford genius were made apparent in a net operating income of \$276,452, which resulted from an increase in revenues of \$258,439, while the expenses increased only \$42,846.

Month	Operating revenues	Operating expenses	Oper. ratio, per cent	Net operating income
March, 1921	\$439,052	\$352,970	80.4	\$77,985
April	697,491	395,816	56.7	276,452
May	744,406	422,328	56.7	263,293
June	713,527	376,383	52.7	261,259
July	744,498	444,794	59.7	187,395
August	763,840	548,246	71.8	70,643
	\$4,102,814	\$2,540,537	61.9	\$1,137,027

The report for April became available about July 1, or about the time Mr. Ford announced his increase in wages and proposed reductions in rates and led to the wide publicity given to statements that Ford had shown an increase in net while increasing wages and reducing rates. For May there was a further increase in revenues, but the expenses also went up and the net was lower than in April; and in each

month since the net has been lower than it was the month before until in August it was only \$70,643, or less than it was in March, although the revenues were greater than in any preceding month and \$324,000 greater than in March. The revenues, expenses and net for the six months of Ford management are shown in the accompanying table.

The report for September is not yet available. All of the other Class I railroads except the Detroit, Toledo & Ironton had submitted their September reports to the commission by November 9, but the road has had some correspondence with the commission asking to be relieved of reporting some of the information called for, in accordance with Mr. Ford's policy of simplifying the accounting.

For the six-months period, it is true, the net operating income was \$1,137,027, as compared with a deficit of \$1,003,804 for the corresponding months of 1920, but it is also apparent that various factors other than the mere change in management or the application of "common sense principles" were at work. The operating revenues had increased 58.36 per cent, the rates in eastern territory having been increased 40 per cent, and the expenses had decreased 24.2 per cent. The railroads of the United States for the same period showed a reduction in expenses of 22 per cent, but traffic in general did not increase under the new rates like the "flivver" traffic of the D., T. & I., and they had a reduction in revenues. If the 20 per cent reduction in rates which Mr. Ford proposed had been applied to his earnings for the six months they would have been reduced by some \$800,000 and his net would have been reduced to about \$300,000; while the net for July and August would have been completely wiped out, unless, of course, it is to be assumed that Mr. Ford as a shipper would have given his road more traffic at lower rates, in which case his expenses would have been greater than they were.

The reduction in expenses consisted of a decrease of 40.28 per cent in maintenance of way, 34.75 per cent in maintenance of equipment, 9.75 per cent in traffic expenses, 6.50 per cent in transportation expenses, and, strangely enough, an increase of 0.21 per cent in general and other expenses. The increases in wages were in effect during July and August, and the number of bad order cars was greatly reduced in August.

Mr. Ford in his interview says: "We don't claim to have done anything new in railroading—yet," and doubtless he is not personally responsible for all the foolish claims that have been made for him. He says: "We have only taken the old system of operation and cut off the obvious absurdities. We have simply cut out the loafing of men, the loafing of engines and the loafing of cars. The result seems to have surprised many people. But there is no mystery or magic about it. Anyone can do it."

The chief mystery seems to be as to what Mr. Ford means by the "result." The thing that surprised everybody was the statement that for the month of April the road had shown an increase in net income of \$200,000, and the publication of that fact in such a way as to indicate that it had been done under rates reduced by 20 per cent and an increase in wages, when neither had then taken place. The reduction proposed in interstate rates is still under suspension by the Interstate Commerce Commission and the reduction in local rates in Ohio affects very little of the D., T. & I.

traffic. The results that appear in the reports of the road do not reflect the cutting out of any considerable amount of loafing, lost motion or "absurdities," although of course the reports do not show everything.

Mr. Ford probably would not like to have his record judged simply from the standpoint of earnings. What the D., T. & I. makes or loses is of comparatively little importance as compared with the part it may play in the development of the motor business. But "almost anyone" could show an increase in net out of an increase of 58 per cent in gross earnings. If he were operating a railroad such as the New York Central or the Pennsylvania, Mr. Ford says, he would immediately set about accomplishing four things. He would "reorganize in such a way as to get rid of the unproductive stockholder," which he has done on the D., T. & I. by taking the stock himself. He would "redesign the rolling stock" and he has conducted some experiments along that line from which he promises some "revolutionary changes." He would "expedite the delivery of freight," and he claims that "by speeding up our freight on this preliminary part of its journey we have been able to shorten the time of its delivery by periods ranging from 7 to 14 days," but apparently there is some question as to whether the speeding up has been done by the D., T. & I. or by its connections.

He would also "discharge unnecessary employees" and he says that "by cutting out the lost motion" the 2,600 people on the payroll of the D., T. & I. had been reduced to 1,500. The record shows that while the road was still under the old management there was a reduction in the number of employees from 2,677 in October, in which month the road handled 55,901,000 ton-miles of freight, to 1,328 in February, when the ton-mileage was only 9,789,000, but that there has since been an increase from 1,326 in March to 1,751 in July, the ton-mileage having increased to 38,217,000. The Interstate Commerce Commission has recently declined a request of the D., T. & I. that it be relieved from filing the usual statistical reports on employees, service and compensation.

Mr. Ford's proposal to "retire the parasite non-contributing stockholders and get the ownership into the proper hands," in order to remove the "dividend drain" is not so easy of accomplishment in most cases as in his own. He suggests that the stock ought to be owned by employees, and many roads have encouraged their employees to acquire stock just as we understand the Ford Motor Company has, but any prominent railroad that showed profits comparable to those of the Ford company would speedily have the dividend drain reduced by regulation; and stockholders who are so "productive" in the way of tonnage as the present owner of the D., T. & I. are not available to every road.

Mr. Ford says that "overweight of rolling stock is the prime mistake on the mechanical side of railroading," that "engines and cars are four or five times as heavy as they should be" and that "a freight train is several times the weight of the load it carries." If the weight of rolling stock were as great as this, the results of his experiments in building a lighter freight car would be awaited with much interest, but the condition is hardly as bad as Mr. Ford pictures it. The latest report of the Interstate Commerce Commission giving operating statistics for Class I roads shows that for eight months of 1921, when the train loading has been less than it is in a year of heavy traffic, the gross ton-miles, including the weight of the locomotive and tender, totaled 559,749,000,000, while the net ton-miles were 222,345,000,000, which would indicate that the cars and engines weigh a little over one and a half times the weight of the load. Excluding the locomotive and tender, the gross ton-miles were 489,402,000,000.

#### As To Speeding Up Freight

Neither do all roads enjoy the peculiar opportunity that Mr. Ford does for "expediting the journey of the freight

carrier." He says that "on the D., T. & I. we tolerate no idle men, idle cars or idle engines," and that "freight can be kept moving." This would suggest that he had found a way to improve on the average mileage per freight car per day shown by the railroads generally, which many critics of the roads have often called unduly low. The reports of the D., T. & I. to the Interstate Commerce Commission do show an improvement in this respect this year as compared with last year. From September, 1920, to February, 1921, the average mileage per car per day was 19.2, 17.2, 17.9, 12.1 and 15.8. From March to August, 1921, it has been 27.8, 26.3, 27.3, 25.1, 21.6 and 20.7. For all the roads the average for August was 22.7, which was less than it was a year ago. The decrease from 27.8 in March to 20.7 in August on the D., T. & I., however, does not indicate a speeding up of the delivery of freight on the "preliminary part of its journey." It indicates rather that Mr. Ford's traffic manager is giving his freight to the connecting roads that will deliver it the quickest, and the D., T. & I. is in an excellent strategic position to stimulate competition among them in this respect. A locomotive cannot always be sent to pick up a single car of freight without delay, but most any road is glad to keep one waiting a short time to get a train load.

A newspaper man who is "touring on Henry Ford's railroad" for the Scripps-McRae papers, and telling how Mr. Ford is accomplishing wonders "by common sense and work," explains it this way: "Ford simply plays one line against the other. He says to one big trunk line, 'Give me service and I will give you freight. No service, no freight. I will give it to another line.' The D., T. & I. is such a big feeder that there isn't a single big trunk line that can afford to loaf on the job."

Mr. Ford says that "one of the first things is to dispense with the legal staff" because a "well-managed road needs less of that sort of service" and that this was done on the D., T. & I. "The lawyers are mostly in the claims department," he said, and as the Ford company has its own lawyers and as Mr. Ford is his own largest shipper, we can easily understand why he could reduce the claim department of his railroad.

Mr. Ford greatly prefers to have it believed that the conversion of a deficit into a net operating income represents his improvements on the "present bad system of railroading." In reply to a suggestion that his success was due to the fact that he was able to divert Ford traffic to the D., T. & I., Mr. Ford said: "How can that be true when the road hauled more tonnage the year before we took it over than it has hauled since we have had it? The figures are all in Washington; why doesn't some one look them up? The great majority of the freight which goes over our roads goes over other roads, too." This entirely ignores the fact, which is shown by the figures in Washington, that while the tonnage this year has been less than it was last fall, much of it is a kind of tonnage which the road did not have last year and which but for the Ford Motor Company it would not have this year. While the coal traffic this year has been greatly reduced on the D., T. & I., as on other roads, Mr. Ford has not only given it an automobile tonnage which it did not have before, but the new tonnage pays a much higher rate per ton-mile. The average receipts per ton-mile increased from 1.331 cents in January to 1.833 cents in March and were 1.893 cents in July, as compared with 1.254 for the railroads as a whole.

Mr. Ford says he "doesn't like to appear as criticizing any railroad manager" and that he has "never done so." He is merely criticizing "the present bad system." We have no desire or occasion to criticize Mr. Ford either as a manufacturer or as a railroader. We only wish he would be more particular to tell the truth or to find it out if he does not know it, before he attempts to compare with so much pub-

licity his own "good management" with the "bad system" of the other railroads.

### In a Nut Shell

Comparing Mr. Ford's railroad with all the Class I railways of the United States is like comparing a mouse with a hippopotamus. Since, however, the propaganda regarding the "miracle" worked on the D., T. & I. has invited the comparison, the following facts are presented for what they are worth: Between June and August when Mr. Ford made

his famous changes in rates and wages the total earnings of the D., T. & I. increased 7 per cent, while those of all the Class I railways increased 9.3 per cent. Meantime the operating expenses of the D., T. & I. increased 46 per cent, while those of the Class I railways increased less than 1 per cent. In consequence the net operating income of the D., T. & I. declined over 70 per cent, while that of the Class I railways increased from \$51,640,000 to \$90,241,000, or almost 75 per cent. The increase in net operating income of the Class I roads was mainly due to the reduction of wages of July 1.

## Hearings on Capper Bill in Senate Committee

### Carriers Testify Against Legislation Designed to Destroy Protection of Adequate Revenues

WASHINGTON, D. C.

THE PRESENTATION of testimony on behalf of the railroads in opposition to the Capper bill and other bills proposing the amendment of the Transportation Act to limit the authority of the Interstate Commerce Commission to regulate state discrimination against interstate commerce was begun before the Senate committee on interstate commerce on Monday, November 14. Fred H. Wood, general attorney and commerce counsel of the Southern Pacific, was the first witness for the carriers, taking up the question of the jurisdiction of the Interstate Commerce Commission over state rates. He was to be followed by Alfred P. Thom, counsel for the Association of Railway Executives, and H. A. Scandrett, commerce counsel of the Union Pacific.

The National Association of Owners of Railroad Securities also expects to present testimony and has retained Edgar E. Clark, former chairman of the Interstate Commerce Commission, to represent it in defending the rate-making provision.

Mr. Wood said he did not think the Interstate Commerce Commission had misinterpreted the act or overstepped its bounds in ordering increases in certain intrastate rates; that neither Section 15a, the rate-making section, nor the provision of the Transportation Act relating to state rates increased the commission's authority; that the latter only clarified it and that even had these sections not been enacted, the commission would have been justified in making the orders it did under the doctrines of the Shreveport case. In that case, the Supreme Court held that the Interstate Commerce Commission has authority to regulate intrastate rates where they are found to discriminate against interstate commerce.

"I don't think that there is anything in the law as it stands today or in the administration of that law by the Commission as evidenced by its decisions which would warrant the assumption that the state commissions today are not as a whole perfectly free to adjust individual rates on traffic moving within their own borders to the reasonable requirements of purely state traffic," said Mr. Wood.

In considering the state rate cases, Mr. Wood said the commission had required the introduction of evidence similar to that presented in the Shreveport rate case.

"I shall subsequently review," said Mr. Wood, "one or two of these cases, in a sufficient way to put before the committee the character of the evidence and the contentions that were made. Those cases I think were typical of all and from what I know of the cases in which I participated and of the cases in which I did not participate, but with which I am familiar, I think that without any amendment to the law every one of these orders would be sustained—must be sustained—under the doctrine of the Shreveport case itself.

"My opinion is that neither the general advance rate case before the Interstate Commerce Commission in Ex Parte 74 or these state rate cases would have been fundamentally

different in any particular even if Section 15a had not been enacted.

"The emergency for the general advance in rates in order to restore the credit of the carriers and insure adequate transportation facilities would have been just the same. That emergency would have applied just as acutely to the state traffic as to the interstate traffic with or without the provisions of Section 15a and these resulting discriminations growing out of the advance in the interstate rates and the failure to advance state rates would have been just exactly the same.

"I am safe in saying that, whether the Interstate Commerce Commission was mistaken or not, in every one of these cases it believed that the evidence before it, taken as a whole, was sufficient to justify the order that it made even if there had been no amendment to the Interstate Commerce Act through the operation of the Transportation Act."

Mr. Wood testified that, at the invitation of the Interstate Commerce Commission three members of state commissions, selected by the National Association of Railway and Utilities Commissions participated in the hearings which resulted in the commission's order making a general increase in freight and passenger rates effective on August 26, 1920. He read a letter sent by these commissioners to their national organization in which they reported their concurrence in the commission's action.

"The letter shows," the witness said, "that the decision was just as much the decision of these state commissioners as it was that of the Interstate Commerce Commission."

The real question before the committee, he said, is whether the exercise of jurisdiction by the commission is consistent with public policy and the practical requirements of public regulation. He said that previous witnesses on behalf of the shippers and the state commissions had suggested that the commission found its jurisdiction over state rates in the provisions of Section 15a, but that this was not a fact. In each case the commission did examine the effect on the revenues of the carriers of action or non-action on the part of the states, because the effect on revenues is always a pertinent question in a discussion of the cases, and it had also reviewed its own action in Ex Parte 74 which was based on Section 15a, but this was in accordance with the policy of considering the attendant circumstances.

The commission also had to consider the purpose of the statute as a whole, but it did not rest its control over state rates on Section 15a. It was impossible to present evidence as to each specific rate and cases which have arisen under the Shreveport doctrine have always been based on representative rates. The commission had evidence of specific rates on specific relationships which were representative, and in no case was there contradiction of that evidence, except

as to a few particular rates on which issue was joined. In some cases the commission found that as to these rates the carriers were right and in some that they were wrong and it excluded the particular traffic involved from its order.

The Supreme Court, Mr. Wood said, has not undertaken to define the limitations of the commission's jurisdiction as it existed before the new law. The prohibition against discrimination against persons, localities and descriptions of traffic, he had always thought was all-embracing. The new law simply added the words "or interstate commerce." This he considered a valuable addition even if there was no intention to add to the commission's jurisdiction because it indicated the intention to make it clear that the prohibition against discrimination was all-embracing. If the previous language was not all-embracing, the new language in Section 13 was wise, because it is unthinkable that we may have effective regulation of commerce unless the federal tribunal does have power to remove any discrimination against interstate commerce which it finds.

Senator Cummins suggested that the state commissioners and those who agree with them say that no evidence was presented to the federal commission except that the state rates were lower than the interstate rates. Mr. Wood said that such a statement is most incorrect and that he would endeavor to show before he concluded his testimony that the facts regarding the various state rate cases were not as they had been represented to the committee by previous witnesses.

To take away from the Commission its existing authority to deal with the transportation question as a national problem and prevent discriminations against interstate rates would result in chaos, inadequate revenues for the carriers and in inadequate transportation at a time when the country is undergoing economic readjustment, Mr. Wood said:

"The suggestion," said Mr. Wood, "that by reason of the provisions of the Transportation Act state rates have been frozen and the states deprived of the power to adjust individual rates within their own borders to the legitimate requirements of state commerce is without foundation.

"Regulation of interstate commerce and its instrumentalities presents a national problem. As to it, there are certain fundamental matters which must be decided by the national government as a national policy. These are the general level of rates necessary to provide adequate transportation for the country as a whole and the prevention of undue discrimination in favor of the persons of one locality or state as against another. There is no more loss of dignity or of states' rights in a statute which requires the states to conform to these fundamental requirements according to the national standard, leaving to the states the adjustment of rates within the states where they do not impugn the national program, than there is in the supervision exercised by the federal courts over the action of state courts on matters likewise arising under the Constitution.

"The removal of the commission's power would also retard the orderly liquidation of freight rates in response to such reduction in operating costs as may be brought about and in thus extending to the country the maximum benefit of downward revisions of rates in the necessary economic readjustment. With the carriers' wage bill alone for the past year substantially equivalent to the entire gross revenues of 1916 or 1917, a restoration of a pre-war level of rates as a whole cannot be expected for a long time to come. The nation's economic readjustment requires that such reductions in rates as may be possible in response to reduced operating expenses should be placed where they will do the most good. By the restoration of pre-war statutory passenger fares or by reduction in passenger fares to a lower level than now exists the opportunity to reduce freight charges in the interest of commerce and of the people as a whole would be greatly diminished. This is one of the results that would follow by withdrawing from the commission its existing authority

or requiring a cancellation of its orders by legislative enactment. To the extent that state commissions whittle away revenues from freight traffic by reductions in rates the opportunity in an orderly way to make such reductions on interstate traffic in basic commodities is likewise diminished.

"If reduction in freight rates is to be made an effective instrument in the economic readjustment orderly and harmonious action looking towards placing of these reductions where they will do the most good is necessary and cannot be accomplished as long as a large proportion of the states insist upon the maintenance of rates which reduce revenue and result in discrimination against interstate commerce.

"The carriers are already assuming as much of the burden of the economic readjustment as they can stand. By loss of traffic and by many reductions in rates to meet economic conditions their revenues are today far below the standard required for the maintenance of adequate transportation facilities. It is as essential that they should come out of this period of economic readjustment as solvent institutions and with a reasonable assurance of established credit as it was at the time that the Transportation Act was passed.

"No single act upon the part of Congress would be as severe a blow to the rational regulation of transportation charges for these purposes as the removal from the Interstate Commerce Commission of the existing power to bring into harmony that which ought to be brought into harmony, to see that out of all of its traffic the carriers' revenues reach that standard which, when the economic readjustment is complete, the interests of the country demand they should reach, and to remove the undue discriminations against interstate commerce which would result from freeing the states from all supervising control or limiting the jurisdiction of the Commission so that it could not act as the practical requirements of the situation demand."



From the New York Tribune

Isn't It Rather Dangerous Not Having the Two Hitched Together Some Way?



*Large Modern Tunnels Have Been Constructed*

## C. & O. Improves Line and Grades at St. Albans, W. Va.

### Increased Coal Traffic Necessitates Rebuilding of Important Branch for Mallet Operation

**T**HE CHESAPEAKE & OHIO has, for some time past, been facing the problem of handling efficiently the increasing traffic originating in those sections where coal is almost the only tonnage moved. This is particularly true in the vicinity of the more newly developed fields of the Kanawha and Logan districts where a major portion of that road's coal traffic is obtained. This condition is now being remedied, in accord with the more pressing needs, by con-

in each direction. This replaces an old line having grades of one per cent against loaded traffic and 2.0 per cent against empty movement and also shortens the haul by about three-quarters of a mile. In place of the nine highway crossings on the old line, all of which were at grade, there are now only two, neither of which is at grade. These necessitated the construction of one under crossing and one highway bridge. Two tunnels, one 1,500 ft. long and the other 300 ft., were required.



**Permanence in Construction Marks This Highway Under-Crossing**

siderable grade and line revision and some double tracking, all of which will materially speed up the movement through this section. It will then be possible to use Mallet locomotives, to secure longer hauls and heavier train loads and to dispense with helper service.

The construction described in this article is concerned with the revision of the grade and line on a part of the Coal River branch connecting with the main line at St. Albans, W. Va., near which city most of the work was done. Slightly less than four miles of new single track line has been constructed with maximum grades of 0.20 per cent compensated

The Coal River branch serves a part of the Kanawha district, the territory often being designated as the Coal River district. It extends south from the main line for a distance of approximately 60 miles and contains about 164 miles of line. Leaving St. Albans, the line follows Coal river to the town of Sproul, W. Va., about 15 miles distant and a junction point for two lines running back into Boone, Logan and Raleigh counties. The river also splits at this point into two streams known as Big and Little Coal rivers along which the two branch lines follow generally. The Kanawha and Logan fields, of which this section is a part, are the newest fields along the Chesapeake & Ohio. The coal produced is highly volatile and makes up about 60 to 65 per cent of the road's total coal tonnage. The development in this territory in the past has been chiefly of an extensive nature. The growth of the traffic in this district has been rapid with the result that the existing line was offered, under ordinary circumstances, as much or more traffic than it could handle. Of the various sections lying within the district mentioned the resources of Boone county are perhaps the least developed and as a future source of supply are of immense importance. Areas containing many thousands of acres have not as yet been touched and tests in these areas have shown them to contain coal in abundance and of the finest grade.

Today about 71 mines along the lines of the Coal River branch deliver coal to the Chesapeake & Ohio, all of which must pass out onto the main line at St. Albans. In addition

there are about 14 mines located in the fields east of Whitesville, the junction point of the Cabin Creek branch with the main line and the St. Albans line which, because of severe eastbound grades leading over the hills in this vicinity, dispatch their loads over the Big Coal River line. There are about six miles of mountain grades on this connection that are so heavy that two 95-ton Consolidation locomotives can only handle from six to eight loads eastward.

During the last six months or so, only about one-half to three-fourths of these mines have been working and then not always on full time. Even with such a condition from 300 to 350 cars have been moved out of this Coal River district daily. These have been handled in trains of approximately 50 cars, or under, by a 95-ton Consolidation locomotive which brought them to within about  $4\frac{1}{2}$  miles of St. Albans, where the first adverse grade was encountered. A pusher sent out from St. Albans met each train. In many cases it was necessary to add a third locomotive just outside of the city limits, double heading the train up a one per cent grade whose summit was in about the center of the town. A tunnel situated on the first adverse grade limited the size of power which could be utilized to the locomotives mentioned. This power was turned at St. Albans, the loads being made up at this point in 75 to 80 car trains and moved either east or west by 2-6-6-2 Mallets. In contrast to this, trains of 75 cars will now be handled out of the Coal River district by Mallets which will take them through to the Russell yards on the west or to the Handley yards on the east. Pusher service will be dispensed with and as a result of the low grade established and the elimination of the numerous grade crossings which have heretofore been a serious hindrance to efficient operation, the capacity of the line should be increased materially.

#### Tunnels Involve Treacherous Materials

The peculiar, even treacherous nature of the soil and rock in this section gave rise to some problems in connection with

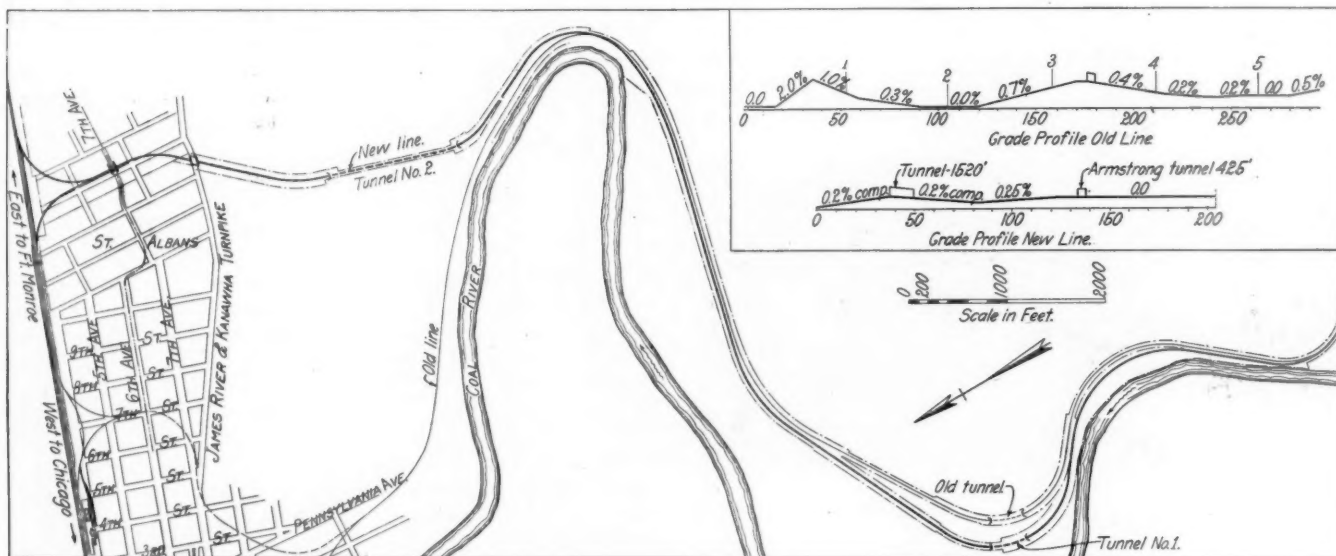
quently at a lower elevation. The first or Armstrong tunnel, which is about 300 ft. long and on a seven degree curve, is about 150 ft. to one side of the old tunnel and, from base of rail to base of rail, about 15 ft. lower, the grade being level at this point. From the Armstrong tunnel to the 1,500-ft. St. Albans tunnel the grading or cutting was comparatively light except at the approaches to the latter where the new line crosses the old. In this part the line follows



The Batter Given the Side Walls Is Quite Evident to the Eye

close up to the side of a sandstone cliff that required considerable blasting to secure proper line.

The section through which the short tunnel was driven is composed of slate and sandstone, intermixed in spots and overlaid with clay. In driving the heading for this tunnel, the wall plates were carried along at the same time by drifting. However, before the bench was removed a movement developed in the overburden that resulted in the formation of a side pressure that pushed in the lining for about 100 ft. at one end. This "squeeze" occurred at the springing line



Map and Profiles of the New and Old Lines

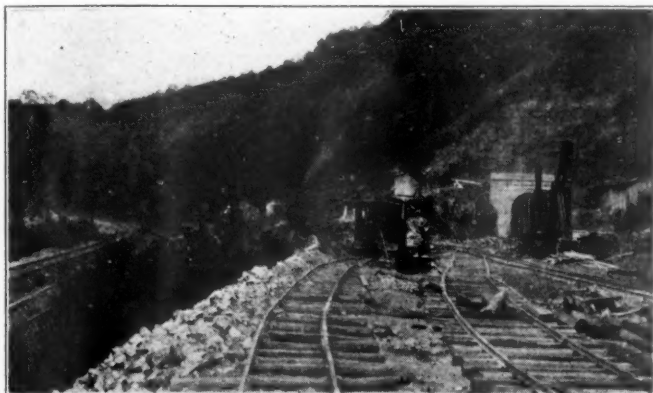
the construction of the line that brought it out of the routine of ordinary grading and tunnel work. The only work of any magnitude was in connection with the construction of the tunnels, both of which developed slides at the portals as well as "squeezes" on parts of each bore, the latter being far the most serious.

The new line leaves the old at about the beginning of the first adverse grade, although it practically parallels it farther down the side slope of the hills in this section and conse-

and showed an average inward movement on each side of about 6 in. before being stopped by heavy cross bracing of 10-in. by 10-in. timbers set every 8 ft. longitudinally along the springing line. A somewhat similar condition developed in the St. Albans tunnel and both situations were handled in a like manner.

The longer tunnel was driven through practically solid sandstone. Headings were started from each end, the bench on the east end or the one farthest from St. Albans being

brought along with the heading. At the same time a heavy cut leading to the west end was excavated to grade and carried up practically to the location of the west portal. The finishing of these two pieces of work left a wall of sandstone running from side to side of the cut and up to the height of the tunnel springing line. This was removed last. In bringing the bench through from the east, considerable difficulty was experienced with the large amount of water which seeped out of the tunnel walls. On the morning following



The Portal at the St. Alban's Tunnel Where the Old and New Lines Diverge Before Entering the Town

the removal of the rock at the portal, no signs of water were seen. The unusual character of this development brought about a hurried inspection of the situation which disclosed the fact that the steam shovel in the tunnel was tipped partly on one side and was leaning against the wall plates and also that about 320 ft. of the west end of the tunnel had been subjected to a severe strain. The 12-in. by 12-in. segments on the arch of the tunnel timbering had been sprung or bent, some were even broken and nearly all in the 320-ft.



Clearing Out the Bench in the St. Alban's Tunnel

section showed that they were under heavy pressure. The springing lines had been squeezed in about 6 in. and tests revealed that they were still moving slightly. The hard sandstone subgrade of the tunnel had been heaved up about 1½ ft. and was also moving slightly.

As in the case of the short tunnel, cross bracing was installed and, believing that the removal of the rock across the entrance had in a measure been the cause, the men in charge started immediately on the construction of the portal. The portal was excavated down to a depth of about 6 ft. below

subgrade and when it was poured, a 4-ft. by 6-ft. concrete beam, reinforced with old rails and tied in with the side walls, was poured integrally with it. When this was completed all movement ceased. Two additional reinforced beams of the type used at the portal were poured at the west end in conjunction with the lining of the tunnel while the remainder of the 320-ft. section was reinforced by the construction of a concrete "invert" having a maximum depth of 2 ft. 2 in. and a minimum depth of 1 ft. 6 in. under the wall plates. This required an excavation of about 4 ft. by drilling and dynamiting as the heaving did not seem to have disturbed the formation of the rock. The invert as well as the arches of the lining were reinforced with wire mesh extending up into the side walls which were given a batter of one ft. inward as an additional precaution. This batter is shown clearly in one of the photographs. Because of the way the old timber lining was being stressed at many spots the concrete was poured around the cross bracing which was left in place until the concrete had set. They were then cut out and the holes filled.

The tunnel on the old line had a clear width of 16 ft. between side walls and an overhead clearance of 16 ft. above top of rail. It was also on an eight-degree curve and this factor, in connection with the measurements, made it unsafe to operate Mallets through it. The new tunnel section measures 18 ft. between side walls and 23 ft. above subgrade or approximately 21 ft. above the top of rail. Except where the "squeeze" occurred the concrete was poured one foot thick over the timbers, which were almost uniformly 12-in. pieces backed by 4-in. lagging, thus giving a maximum thickness of concrete of about 2 ft. Where the "squeeze" occurred the width or thickness of the wall at the subgrade was increased to give the one foot batter mentioned. The pouring of the portals and the tunnel lining was handled from concrete plants set up near one portal of each tunnel. The concrete was carried in and placed from scaffold cars.

Other work in connection with this grade and line revision included the construction of a steel overhead bridge, a concrete undercrossing carrying both a street and an electric car line, a drainage system, a four-track yard adjacent to the present station facilities and a new highway to follow certain stretches of the old roadbed.

The work was planned by and carried out under the direction of the engineering department of the Chesapeake & Ohio, C. W. Johns, engineer of construction, and E. G. Rice, resident engineer, in direct charge of the field work. The Boxley Brothers Company, Orange, Va., was the contractor for the construction.

## Freight Car Loading

WASHINGTON, D. C.

THE VOLUME of railroad freight traffic, as measured by the weekly car loading reports compiled by the Car Service Division of the American Railway Association, has apparently passed its peak for this year, after having exceeded that for the corresponding weeks of 1919 for two weeks although not having quite reached the figures for 1920. The curves showing the loading for the past four years show a steady increase from spring to fall ending during the last week of October in the last three years, although the decrease began considerably earlier in 1918.

Loading of revenue freight totaled 829,722 cars during the week ended on November 5, compared with 952,621 cars during the previous week or a reduction of 122,899. This was 85,893 cars less than were loaded during the corresponding week of 1920 but 2,998 cars more than were loaded during the corresponding week in 1919.

While there was a reduction in the loading of all commodities compared with the week before, the principal de-

crease was in coal and merchandise and miscellaneous freight, which includes manufactured products. The decrease in traffic was to some extent due to the observance of two church holidays during the week.

Loading of merchandise and miscellaneous freight amounted to 515,894 cars which was 62,684 cars less than during the week before but was 10,000 cars in excess of the loading of that commodity during the corresponding week last year. It was, however, 16,778 cars less than were loaded during the corresponding week in 1919.

A decrease of 34,818 cars, compared with the week before, was reported for coal, the total being 172,875 which was, however, 30,945 cars less than were loaded during the same week last year but 60,758 cars more than during the same week in 1919. Ore loadings also dropped off 7,230 cars within a week, the total being 10,979.

Grain and grain products, according to the report, amounted to 40,921 cars, a reduction of 8,028 cars compared with the week before but 4,698 cars more than were loaded during the corresponding week last year and 1,700 in excess of that week in 1919. Livestock also declined 6,379 cars to a total of 31,126 which was, however, only slightly under the total for the corresponding week last year while forest products with a total of 51,188 cars was 3,160 less than the week before.

Coke loadings were 6,739 cars, 600 less than the previous week.

Compared by districts, reductions in the loading of all

commodities were reported both compared with the week before and the corresponding week in 1920.

The number of surplus freight cars for the week ending November 1 averaged 80,203, a reduction of 19,768 as compared with the week before. This included 22,628 box cars, a reduction of 3,996, and 33,643 coal cars, a reduction of 16,265.

Refrigerator equipment continues to be in strong demand. Loading in the Puget Sound district, principally apples, is in excess of last month and much in excess of last year. Other Western districts continue active loading. Citrus fruit is moving from Florida in increasing volume. All car requirements are being satisfactorily met. The box car supply is ample at all points to meet requirements, which remain comparatively heavy and the coal car supply is about equal to the requirements. Shortages which existed during the past few months of exceptional demand have been eliminated almost entirely.

The number of bad order cars on November 1 was 345,201, or 15 per cent, a reduction of one-half of 1 per cent as compared with October 15.

The number of surplus cars for the period November 1 to November 8, however, shows an increase to 93,172, of which 34,737 were coal cars and 32,747 were box cars. There were shortages amounting to 4,600 as compared with over 11,000 the week before.

The summaries for the weeks of October 29 and November 5 follow:

#### REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO FOR WEEK ENDED SATURDAY, OCTOBER 29, 1921

Districts:	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Merchandise L.C.L.	Miscellaneous	Total revenue freight loaded			Received from connections		
										This year 1921	Corresponding year 1920	Corresponding year 1919	This year 1921	Corresponding year 1920	Corresponding year 1919
Eastern .....	1921	12,254	3,686	52,306	2,693	5,261	4,467	65,822	98,019	244,508	238,442	222,840	268,360	257,768	246,959
Allegheeny .....	1921	5,643	2,782	60,169	3,612	7,843	10,130	51,051	97,212	195,923	210,427	201,498	137,708	150,612	143,452
Pocahontas .....	1921	3,541	3,696	58,940	2,614	3,196	5,123	50,801	68,012	136,980	37,469	40,437	16,772	19,185	21,138
.....	1920	2,320	3,464	67,362	8,046	3,450	12,068	42,015	71,702	133,229	129,367	131,526	77,622	72,259	75,174
.....	1919	276	441	24,681	212	1,457	2	5,870	4,041	125,149	158,440	140,515	59,829	59,998	62,453
Southern .....	1921	96	277	24,184	969	1,797	257	5,189	4,700	148,113	140,817	139,200	68,531	66,455	66,886
.....	1920	3,737	2,549	27,657	562	16,967	563	39,331	41,863	68,719	66,280	59,463	52,916	51,353	50,897
.....	1919	2,844	2,458	26,745	1,401	18,371	2,988	35,587	38,973	981,242	935,479	.....	681,738	677,630	666,959
Northwestern .....	1921	13,080	10,136	12,590	872	12,765	6,463	29,368	39,875	.....	.....	.....	.....	.....	.....
.....	1920	12,867	9,329	11,171	1,836	14,755	38,991	31,771	51,417	.....	.....	.....	.....	.....	.....
.....	1919	12,215	13,779	25,548	196	7,329	770	32,525	55,751	.....	.....	.....	.....	.....	.....
Central Western .....	1921	9,900	12,058	25,503	479	6,649	3,040	15,939	31,361	.....	.....	.....	.....	.....	.....
.....	1920	3,846	3,218	5,971	190	7,373	821	15,939	31,361	.....	.....	.....	.....	.....	.....
.....	1919	3,826	2,499	7,852	149	6,601	565	17,034	27,754	.....	.....	.....	.....	.....	.....
Southwestern .....	1921	48,949	37,505	207,693	7,339	54,348	18,209	239,656	338,922	952,621	981,242	935,479	681,738	677,630	666,959
.....	1920	37,496	32,867	222,986	16,492	59,466	68,039	213,440	330,456	.....	.....	.....	.....	.....	.....
.....	1919	39,784	41,196	217,025	9,556	56,972	41,642	149,711	379,593	.....	.....	.....	.....	.....	.....
Total, all roads .....	1921	11,453	4,638	.....	.....	.....	.....	26,216	8,466	.....	.....	.....	4,108	.....	.....
Increase compared .....	1920	.....	.....	15,293	9,153	5,118	49,830	.....	.....	28,621	.....	.....	.....	.....	.....
Decrease compared .....	1919	9,165	.....	.....	.....	.....	.....	89,945	40,671	17,142	.....	.....	14,779	.....	.....
.....	1921	51,001	40,188	212,219	6,647	53,426	23,186	236,640	338,985	962,292	1,008,818	977,051	645,522	701,312	694,515
.....	1920	48,372	36,210	191,506	6,332	53,017	19,789	232,541	318,267	906,034	1,018,539	972,078	609,378	687,694	694,945
.....	1919	53,964	34,073	180,339	6,054	49,459	25,702	233,465	312,684	895,740	1,011,666	982,171	597,524	701,083	700,513
.....	1921	57,390	32,868	178,005	6,515	49,466	26,393	234,227	317,429	901,893	992,283	957,596	581,252	687,398	711,193

\*Grain and total figures revised due to correction on D. E. & W. reports.

#### REVENUE FREIGHT LOADED—WEEK ENDED SATURDAY, NOVEMBER 5, 1921

District	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded		
										This year 1921	Corresponding year 1920	Corresponding year 1919
Eastern .....	1921	9,893	3,189	46,380	2,274	4,793	2,904	65,129	78,533	213,095	.....	.....
.....	1920	5,415	3,148	50,641	3,180	6,963	10,752	47,948	89,467	167,811	217,514	199,981
Allegheeny .....	1921	3,401	3,292	48,582	2,692	2,617	4,221	48,192	54,814	167,811	193,511	175,386
.....	1920	2,594	3,542	61,147	7,104	3,224	12,445	49,058	64,397	167,811	193,511	175,386
Pocahontas .....	1921	221	201	22,580	194	1,302	9	5,617	3,356	33,480	.....	.....
.....	1920	111	278	21,004	857	1,834	181	5,037	4,237	33,480	33,539	33,247
Southern .....	1921	3,137	1,973	24,903	516	16,476	511	39,288	38,443	125,247	126,783	113,515
.....	1920	2,440	2,760	29,208	1,280	17,545	2,575	34,389	36,586	125,247	126,783	113,515
Northwestern .....	1921	11,048	8,285	7,677	703	11,802	1,871	28,809	34,509	104,704	147,953	131,397
.....	1920	11,603	8,027	10,717	1,677	13,866	37,166	28,075	36,822	122,379	132,027	117,380
Central Western .....	1921	9,558	11,252	17,696	209	6,754	748	31,805	44,357	122,379	132,027	117,380
.....	1920	10,196	11,420	23,931	536	6,153	3,193	29,978	46,620	63,006	64,288	55,818
Southwestern .....	1921	3,663	2,934	5,057	151	7,444	715	15,930	27,112	829,722	915,615	826,724
.....	1920	3,864	2,138	7,172	114	7,212	581	16,993	26,214	.....	.....	.....
Total, all roads .....	1921	40,921	31,126	172,875	6,739	51,188	10,979	234,770	281,124	829,722	915,615	826,724
.....	1920	36,223	31,313	203,820	14,748	56,797	66,893	201,478	304,343	.....	.....	.....
.....	1919	39,221	40,268	112,117	11,943	58,777	31,726	146,354	386,318	.....	.....	.....
Week ended—												
November 5 .....	1921	40,921	31,126	172,875	6,739	51,188	10,979	234,770	281,124	829,722	915,615	826,724
October 29 .....	1921	48,949	37,505	207,693	7,339	54,348	18,209	239,656	338,922	952,621	981,242	935,479
October 22 .....	1921	51,001	40,188	212,219	6,647	53,426	23,186	236,640	338,985	962,292	1,008,818	977,051
October 15 .....	1921	48,372	36,210	191,506	6,332	53,017	19,789	232,541	318,267	906,034	1,018,539	972,078
October 8 .....	1921	53,964	34,073	180,339	6,054	49,459	25,702	233,465	312,684	895,740	1,011,666	982,171

# The Legal Status of a Railroad Strike\*

## Interference with Service Under Present Conditions Is Against the Government Instead of Against Corporations

By James C. Davis  
Director General of Railroads

IN PRESENTING THIS PAPER it should be distinctly understood that it is done in a wholly personal way, and is not in any wise connected with any official position I may hold, and whatever opinions I express or statements I make are entirely on my own responsibility. It is further only fair to say that in some 20 years of railroad corporate service I have always maintained the most liberal and progressive ideas in the matter of the rights of organized labor, firmly believing in the same right of labor to organize for the protection of all lawful rights, by either defensive or offensive action, that capital might have, and that I freely subscribe to the doctrine that "the labor of a human being is not a commodity or article of commerce." But, over and above all these considerations, I have an abiding belief in the settlement of all disputes, especially those involving the rights and responsibilities connected with public service, by some legally constituted authority, with power on the part of the government to enforce the orders and findings of those public tribunals charged with the power to settle disputes arising between employers and employees, where these employees are engaged in the service of what might be termed public service corporations.

### Transportation Act Marks a New Era

The passage of the Transportation Act of 1920 marks a new era in the great question of the public control of our national system of railroad transportation. While this law may perhaps be subject to just criticism in some particulars, taken as a whole it is the most constructive piece of legislation ever enacted by Congress on this subject.

In considering the railroad question in any of its phases, the rapid growth of this great industry, and the varied aspects of public opinion and public legislation as the industry has progressed, must always be considered. Next to agriculture, it is the greatest commercial activity of this country, practically brought into existence within the memory of men now living.

It was in the experimental stage from 1830 to 1850. From 1850 to 1875 the science of railroad building was rapidly developed; great projects were created and executed, and during practically all of that period the railroads were generally recognized as private property, there being little or no regulation by either state or national governments. During that period the construction of new roads was aided and encouraged by the federal and state governments, counties and cities, and in every other form of possible public and private aid. In 1876 the United States Supreme Court sustained the right of the national and state governments to control, in the matter of charges, public service corporations, the states being limited to local and intrastate service; the federal government being supreme in the realm of interstate commerce.

From that time down to the period of federal control there was a perfect flood of state and national legislation, much of it enacted without any fair consideration, and the regulation of railroads by the various governmental bodies in the states and in the nation became so multiplied that by the

commencement of federal control the railroads were engaged in a desperate struggle for existence.

Following the 26 months of federal control ending February 29, 1920, and as a preface to the return of the property to its owners, Congress enacted the Transportation Act of 1920 (approved February 28, 1920). This enactment may be fairly described as the only real constructive legislation attempted by Congress in the matter of railroad regulation which in any substantial way contained provisions looking to the property rights of the owners of the interstate lines of transportation, all former legislation having for its object the regulation of rates and operation in the interest of the public and the railroad employees.

This act in great detail increased the specific authority of government control. In the matter of rates, the power to reduce charges as well as increase them is taken from the carriers. A substantial control over local or intrastate commerce is granted to the Interstate Commerce Commission, when such local rates made by state authorities cause an undue or unreasonable preference or prejudice as between persons or localities engaged in interstate commerce, or discriminate against interstate commerce. The commission is given very wide authority in the matter of permitting pooling of earnings, distribution of freight equipment, consolidation of companies, and joint use of terminals; in fact, control in the most minute details of operation is granted to the commission under this law.

In other sections of the law there is created a national "Railroad Labor Board." This board is composed of nine members—three members selected by the President from nominations made by the organizations of labor; three members appointed by the President from nominations made by the carriers, and three members appointed by the President as representatives of the public.

This board is given general authority to hear "and with diligence decide" disputes growing out of rules of working conditions, and is further authorized to hear "and with diligence decide" all disputes with reference to the wages and salaries of employees and subordinate officials.

The Labor Board has construed its power under this act to extend to the control of all changes in wages, and that no changes in existing contracts or rules can be made by the interstate carriers under its jurisdiction except upon approval of the board. In the recent strike controversy in which the principal railroad labor organizations were engaged, the Railroad Labor Board made, in part, the following order:

But, at this time, and while the matter is so intensely before the minds of all, the board deems it expedient and proper to make its rulings and positions on some of the points involved so clear that no ground for any misunderstanding can hereafter exist.

First—When any change of wages, contracts or rules previously in effect are contemplated or proposed by either party, conference must be had as directed by the Transportation Act, and by rules or decisions of procedure promulgated by the board, and where agreements are not reached, the dispute must be brought before this board, and no action taken or change made until authorized by the board.

By this plain and unequivocal language the Labor Board assumed complete control and jurisdiction over all changes in wages, rules, or working conditions.

If the language of the Transportation Act receives the construction which these words seem to imply, and the construction which the tribunals charged with its enforcement

\*Address before the Knife and Fork Club, Kansas City, Mo., November 18, 1921.

have placed upon it, then, since the return of the railroad property at the end of federal control to the several corporations owning same, the interstate carriers have absolutely no power over the rates they can charge for services or the wages they shall pay out in operation, and any complaint as to rates or wages is a complaint against governmental authority rather than against corporate action, and, if the complaint is as to rates, it is lodged directly against a finding of the Interstate Commerce Commission, while if the complaint is in the matter of wages, it is lodged directly against rules or orders of the Railroad Labor Board.

#### Strikes Against Government, Not Corporations

Therefore, a strike against rates, if a strike of this kind could be possible, is against the rules and regulations of the Interstate Commerce Commission, and a strike against wages or working conditions and rules is likewise a strike against rules or decisions of the Railroad Labor Board. In other words, future strikes are directly against orders or findings of the government, represented by the Railroad Labor Board, and are strikes against a situation for which the corporations are not responsible, and which the corporations are absolutely helpless to correct.

In considering the rights of the public in a railroad strike, and especially the duties and obligations of the men engaged in railroad service, a sharp distinction must be drawn between men engaged in private service and those engaged in what might be termed quasi-public service. The latter would include men employed in railroad transportation, street railways, public lighting and water companies, and perhaps those engaged in the production of essentials to the life of the nation, such as coal. These men are quite comparable, as to the nature of their employment, to mail carriers, firemen and policemen.

In the case of interstate railroads, the public, represented by the United States government, has such an interest in the continued and uninterrupted operation of these public ways, involving not only the comfort of all the people and the existence of commerce, but the lives of many helpless men, women and children, that no organized or combined effort to interfere with or block the channels of interstate commerce should be permitted, and, in addition to the foregoing considerations, it is the public that eventually pays the bill for the expenses necessarily incident to railroad operation, an item of importance which, in wage controversies, is ordinarily given scant consideration.

The Supreme Court of the United States, in the case popularly known as the Adamson Law Case (Wilson vs. New, 243 U. S., 333), clearly recognized and announced the doctrine that men engaged in railroad operating service were subject to certain public duties and obligations not present in private employment, and could not, by combined organization, interfere with the freedom of interstate commerce, or the transportation of the United States mail. Commenting on the power of Congress to regulate carriers, the court held that there also existed the same power of Congress to regulate employees engaged in such service, the court saying, in the course of the opinion:

As to the employee. Here again it is obvious that what we have previously said is applicable and decisive, since whatever would be the right of an employee engaged in a private business to demand such wages as he desires, to leave the employment if he does not get them and by concert of action to agree with others to leave upon the same condition, such rights are necessarily subject to limitation when employment is accepted in a business charged with a public interest, and as to which the power to regulate commerce possessed by Congress applied and the resulting right to fix in case of disagreement and dispute a standard of wages as we have seen necessarily obtained.

In other words, considering comprehensively the situation of the employer and the employee in the light of the obligations arising from the public interest and of the work in which they are engaged and the degree of regulation which may be lawfully exerted by Congress as to that business, it must follow that the exercise of the lawful governmental right is controlling.

This opinion definitely declares that the obligations to the

public of the railroad corporations and their employees are alike, in that both the corporations and the employees are bound to recognize and respect the public nature of their employment, and these public obligations are emphasized when we consider that the public service corporations are obliged to continue to furnish services whether they make or lose money, and that the great and controlling interest in the operation of interstate transportation plants is the duty to the public rather than the interests of either the corporations, as such, or the men who are in the service of such companies, and it is this controlling and paramount interest of the public which up to this time in many railroad strikes has either been ignored or given slight consideration.

I believe it is a fair statement of the law to say that railroad corporations having been entirely deprived of the right to fix their own compensation for services, or the right to adjust the cost of operation in the way of wages or working rules or conditions, railroad strikes in the future are against the government, by reason of the fact that such strikes will be directly against rules laid down by public tribunals over which the corporations have no control, and, in this situation, it is of paramount interest at this time to consider the power which the government has to protect this authority which it has undertaken, and the responsibility which the government should exercise in seeing that the orders of the Labor Board are respected and carried out.

#### The Debs Case Decision

In 1894 there was a strike in the Pullman Company. The employees of the great interstate railroads hauling sleeping cars, in sympathy with this strike, refused to handle Pullman cars. Richard Olney, the then attorney general of the United States, under the direction of the then President, Grover Cleveland, obtained an injunction in the United States district court at Chicago against Eugene Debs and other controlling officers of the labor organizations engaged in the strike, enjoining Debs and his associates from interfering with the operation of the railroads engaged in carrying the mails and in interstate commerce. The officers of the various unions refused to obey the decree of injunction. They were found guilty of contempt by the court issuing the decree, and sentenced to imprisonment in the county jail for periods ranging from three to six months.

A writ of *habeas corpus* was sued out to test the legality of this punishment, and in an opinion of the Supreme Court of the United States, announced by the late Justice Brewer, the conviction and punishment of these men for violating the injunctive order of the court was sustained.

In the light of the present situation, this opinion of the court is very illuminating. The court, in sustaining the conviction, not only sustained it because of statutory provisions, giving the government power over the transportation of the mails and interstate commerce, but also rested its opinion upon the broad ground of the power of the government to protect the exercise of governmental functions, and further decided that there was a governmental duty to see that the great highways of interstate commerce were kept open and free from interference, and that the United States mails could be carried without interruption.

The court, in the course of its opinion (in *Re Debs*, 158 U. S., 584), said:

Every government, entrusted, by the very terms of its being, with powers and duties to be exercised and discharged for the general welfare, has a right to apply to its own courts for any proper assistance in the exercise of the one and the discharge of the other, and it is no sufficient answer to its appeal to one of those courts that it has no pecuniary interest in the matter.

Again, the court said:

It is obvious from these decisions that while it is not the province of the government to interfere in any mere matter of private controversy between individuals, or to use its great powers to enforce the rights of one against another, yet, whenever the wrongs complained of are such as affect the public at large, and are in respect of matters which by the Constitution

are entrusted to the care of the Nation, and concerning which the Nation owes the duty to all the citizens of securing to them their common rights, then the mere fact that the government has no pecuniary interest in the controversy is not sufficient to exclude it from the courts, or prevent it from taking measures therein to fully discharge those constitutional duties.

Again, the court said:

The national government, given by the Constitution power to regulate interstate commerce, has by express statute assumed jurisdiction over such commerce when carried upon railroads. It is charged, therefore, with the duty of keeping those highways of interstate commerce free from obstruction, for it has always been recognized as one of the powers and duties of a government to remove obstructions from the highways under its control.

This opinion definitely decided that the government has the right to appeal to its own courts in the protection of proper governmental rights, and that the duty of keeping the interstate highways free from obstructions and in operation is a governmental duty which should be recognized and enforced.

#### Clayton Act

Following this decision, many conflicting decisions were made by state supreme courts and some federal courts as to the facts and circumstances which justified a court of equity in issuing the extraordinary writ of injunction in controversies growing out of labor strikes. This led to the enactment by Congress of what is known as the Clayton Anti-Trust Act (approved October 15, 1914). This act was amendatory of the Sherman Anti-Trust Act, and contained the oft repeated declaration that "the labor of a human being is not a commodity or article of commerce." It in effect legalized "labor, agricultural and horticultural organizations instituted for the purpose of mutual help," and further prohibited restraining any such organizations "from lawfully carrying out the legitimate objects thereof," and also contained the following provision:

Nor shall such organizations be held or construed to be an illegal combination or conspiracy in restraint of trade, under the anti-trust law.

Section 20 of this Clayton act, in effect, practically prohibited the issuance of a writ of injunction in dispute between employers and employees.

It must be noted as very controlling that the restrictions of the Clayton act in favor of labor organizations apply only to direct controversies between employers and employees, and do not apply when the controversy is with a third person, other than the employer or the employee.

Therefore, in controversies which are instituted by parties other than employers or employees, as to the issuance of injunctions, the provisions found in the anti-trust laws will apply.

An important proposition as to the jurisdiction of cases brought under the provisions of this law is that an action may be commenced in any district where one or more of the defendants can be found, and, upon proper order of the court, persons residing in other districts may, by subpoena, be made defendants and brought within the jurisdiction of the court.

The Supreme Court of the United States, as late as January 3, 1921, construed the Clayton act as applied to the issuance of injunctions against labor organizations. The Duplex Company, a manufacturer of printing presses, located in Battle Creek, Michigan, brought an injunction suit against the International Association of Machinists and Michael T. Neyland, business agent and representative of Local Lodge No. 328, with headquarters in New York. A strike of machinists, members of this national association, had been in progress at the Michigan plant, and this action was brought in the state of New York to prevent members of the same order from carrying on what is termed a "secondary boycott," in the way of interfering with the installation of the Duplex Company's printing presses in New York City.

The court sustained the injunction (*Duplex Co. vs. Deering*, 254 U. S., 443), and in the course of the opinion, re-

fering to the provision of the Clayton act exempting labor unions from injunction, said:

But there is nothing in the section to exempt such an organization or its members from accountability where it or they depart from its normal and legitimate objects and engage in an actual combination or conspiracy in restraint of trade, and by no fair or permissible construction can it be taken as authorizing any activity otherwise unlawful, or enabling a normally lawful organization to become a cloak for an illegal combination or conspiracy in restraint of trade as defined by the anti-trust laws.

The court further held that the act did not apply because the controversy in question was not directly between employer and employee.

#### Government Responsible

It would, therefore, seem quite clear that, in the event of a general strike, where any combination of members in a great, powerful railroad labor organization seeks, by an organized cessation of labor, to paralyze the service of railroads engaged in interstate commerce, and prevent them from complying with their public duties in the matter of carrying mails and interstate commerce, the United States government, at the relation of the attorney general or other proper governmental representative, has the right to apply to a court of equity for a writ of injunction, enjoining such employees from combining and conspiring to interfere with interstate commerce, and, upon violation of such orders, the court may inflict punishment upon those guilty of disobedience of same, by fine and imprisonment, as was done in the Debs case.

It further seems entirely clear that the government, having deprived the carriers of the right to adjust on their own motion these disputes, the dispute arising solely because of governmental action, the controversy then becomes one for which the carrier is not responsible, and that the responsibility not only of adjusting the controversy but of protecting the public right of operation rests with the government, and the government must of necessity assume the burden of the settlement of the dispute, and that strikes in the future on all interstate railroads become controversies between the government and the organizations bringing about the strike.

There must be no misconception of this power of the government, or the circumstances under which it should be exercised. There is not now and never will be involuntary servitude in this country. The right of an individual to quit work upon his individual responsibility, should not be questioned. The legality of labor organizations, as such, is fully protected, but when such organizations, in combinations or conspiracy, seek to interfere with and prevent the free exercise of governmental functions,—and the duty to carry the mails and to protect the free and uninterrupted flow of interstate commerce are public duties and functions,—then the rights of the great helpless public intervene, and the government, as the representative and trustee of these rights, must assume the responsibility of protecting them, and take the proper measures to enforce the freedom of the performance of governmental duties by interstate carriers.

On the other hand, the carriers should be held to the same measure of obedience and respect for the findings of duly authorized public tribunals as is required of employees, and the authority of the government should in every instance be exercised to the limit to bring about such obedience and respect.

It appeals to me that this is a logical and fair interpretation of the law as it is now written.

In recovering from the devastating effects of the World War, civilization may well be said to be on trial. No greater catastrophe can be imagined in this country than a prolonged and concerted railroad strike. It means not only the entire disorganization and paralysis of business, with the irreparable financial loss attending same, and this loss must be met by persons who are not responsible for the strike, but, if carried on for a sufficient length of time, it means suffer-

ing, starvation, and often death to the helpless, especially women and children.

Should there not be in this country a sufficient respect for law and order to prevent misfortunes of this character? Is there not sufficient patriotism in all classes of our citizens to say that America will show not only to herself but to the world that civilization in this country is not a failure; that the power of the law is supreme, and that in these controversies, involving so vitally the public interest, we are and will be a government of law and order, and not go back to the wager of battle, to trials of strength, to the tooth, the claw, and the club?

I am always an optimist. I know the people of this country will never write "failure" as to our form of government. What we need in these labor controversies is patience and courage,—a struggle by all good citizens to see the very right of these things while these intricate propositions are being worked out.

I have an abiding faith that the same courage, patriotism, spirit of sacrifice, and love of country and fair play that saved civilization in the great World War will again assert itself, and that the American spirit of love of fair play and respect for law and order will in the end prevail.

### Executives Propose a Temporary Freight Rate Reduction

THE ASSOCIATION OF RAILWAY EXECUTIVES has been proceeding with the plan announced after its meeting in Chicago on October 14, of seeking further wage reductions with a view of reducing freight rates by a like amount, just as if no obstacle to the carrying out of the plan had been interposed by the methods used by the Labor Board to induce the brotherhood leaders to call off their threatened strike. Although the Board has indicated that no consideration can be given to further wage reductions until other matters on its docket have been disposed of, and although the labor leaders have chosen to represent this to their members as a sort of promise that nothing further will be done to their wages for several months, the railroads have announced their plans for taking the formal steps to initiate a wage controversy to be later submitted to the Board in a way to indicate that if there is any delay it will not be their fault. They have also resumed their negotiations with the Interstate Commerce Commission regarding the rate situation, in accordance with their promise to translate at once any wage reductions that may be allowed into rate reductions with the concurrence of the Interstate Commerce Commission. While the labor leaders have referred to a "promise" by the Labor Board, the Board's own public utterances have gone no further than a statement of fact regarding the condition of its docket; and no one at Washington knows of any promise or pledge having been made by anyone. Moreover the demand for rate reductions has been by no means abated because of the Board's announcement that it cannot take up a wage case for some time.

At a meeting of executives in New York on November 10, Alfred P. Thom reported the results of his conferences with the commission, and on Saturday, November 12, the executive committee of the association, accompanied by a number of traffic executives, held a four-hour conference at Washington with the commission. After meeting together for some time the railroad men withdrew for a brief conference among themselves, and after they had rejoined the commissioners the latter in turn withdrew for a short time. The joint conference was then resumed; but neither the railroad men nor the commissioners would give any information of its nature. Evidently all decisive action was deferred pending further conferences this week.

On Wednesday the executives met in New York and at the close of the meeting Chairman T. DeWitt Cuyler announced a temporary reduction in freight rates and a proposal for a general reduction in employees' wages. He said:

"The executives of the railroads of the United States have determined to make for a period of six months an immediate reduction of 10 per cent in carload freight rates on farm products, any reduction in such rates made since September 1, 1920, to be constituted a part of such 10 per cent., this reduction to be put in effect without waiting for a reduction in wages (except on traffic moving wholly within New England).

"The reductions already made since August, 1920, involve an estimated loss of revenue at the rate of \$175,000,000 to \$200,000,000 annually. . . . The railroads are awaiting decisions of the Labor Board which it is hoped will relieve the companies from the expense of many onerous and uneconomical working conditions.

"The railroads are not in a financial position to make this sacrifice. Unless there should be some revival in business the entire immediate loss involved in this proposed reduction would be taken from net earnings. . . . The railroads are relying upon the public for effective aid in bringing about the necessary reduction in labor and other costs, and are hoping for the co-operation of labor itself to that end. They have taken the first step in relieving existing business depression and have given an earnest of their fixed purpose to reduce rates and to relieve at the earliest practical moment, as far as reasonably possible, the transportation burden on the public."

The resolution covers carload rates on wheat, corn, oats, other grain, flour and meal, hay, straw and alfalfa, unmanufactured tobacco, cotton, cotton seed and products (except cottonseed oil and cottonseed meal), citrus fruits, other fresh fruits, potatoes, other fresh vegetables, dried fruits and vegetables and live stock.

If a general reduction of wages and labor expenses is put into effect prior to the expiration of the experimental period, the limitation of six months is not to apply.

### Action to Reduce Wages

The proposed general reduction in wages of employees was announced in notices sent out this week by each road to the chairmen of the different employees' organizations. The notices call for a conference between officers of the roads and representatives of the employees' organizations, and say that the date of the conference is to be fixed later.

There is a general impression that the reduction to be proposed by the roads will be 10 per cent; but nothing has been said as to what classes of employees this rate will apply to, or what differences may be proposed as between the train service men and those engaged in work requiring fewer skilled men. The resolution as adopted requires the necessary steps under the law to be taken as promptly as possible "with the understanding that concurrently with such reduction in wages the benefit of the reduction thus obtained shall, in a manner approved by the Interstate Commerce Commission, be passed on to the public in the reduction of existing railroad rates except insofar as such reductions in rates have been made in the meantime."

The executives also voted to ask the Interstate Commerce Commission for a rehearing of the hay and grain case and for a general inquiry to ascertain whether until a substantial reduction can be secured in the labor and other costs of operation any further reduction in rates could lawfully be required, or, with due regard to the transportation industry, is possible.

RECENT CENSUS STATISTICS in England show that 79 per cent of the population lives in urban districts.

# An Analysis of the Freight Car Situation

It Would Appear That the Pooling of Freight Car Equipment  
During Federal Control Was Anything But a Success

By John E. Muhlfeld

IN A LETTER under date of April 29, 1920, written by L. F. Loree, president of the Delaware & Hudson Company, to E. N. Brown, chairman of the committee of the Association of Railway Executives (of which committee Mr. Loree was a member) appointed to recommend to the Interstate Commerce Commission the purposes for which loans should be made from the \$300,000,000 fund created by the Transportation Act of 1920, Mr. Loree set out many pertinent facts relating to the then ineffective loading, movement and upkeep of existing freight train equipment as an argument against the expenditure of large sums for the purchase of additional

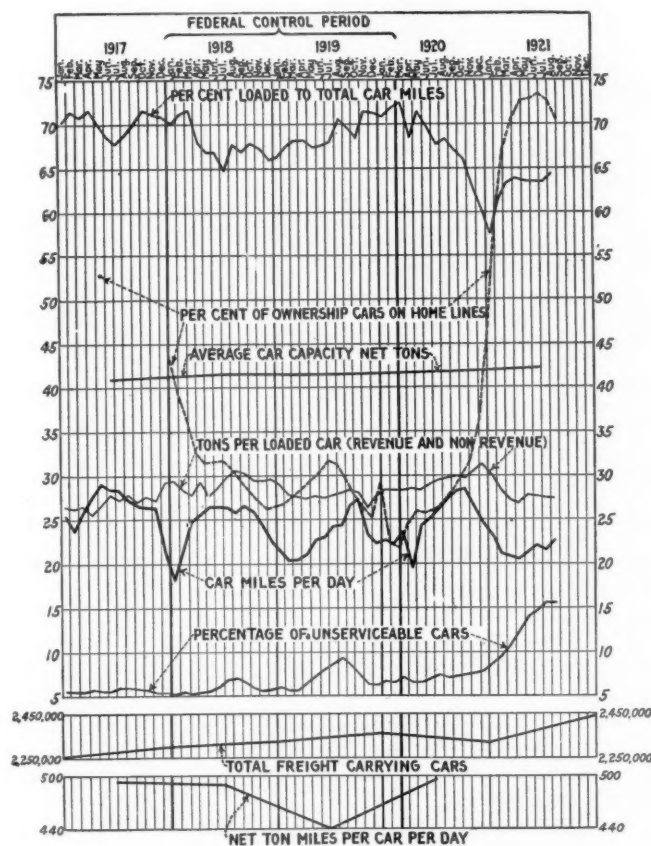
with what obtained prior and subsequent thereto. Summing the figures in their entirety, they would seem to indicate that the roads as a whole, while they have made great progress, have not as yet recovered from the effects of government control and the many inequities permitted thereby. The following brief analyses of the graphics show that these improper practices were directly reflected with the return of the roads to corporate control and that the carriers are now bearing the burden of the United States Railroad Administration having fooled not only itself but everyone else who believed in its methods.

**Per Cent Loaded to Total Cars.** This factor shows decidedly in favor of corporate control. The low marks in May, June and July, 1918 and 1919, can be attributed to the practice of the U. S. R. A. rushing cars promiscuously to points of loading to take care of seasonal movements, disregarding largely the demand for such equipment in territories where it might be loaded, and entirely the factor of car efficiency. The low point in December, 1918, and January, 1919, can be attributed to the falling off in loading after the Armistice during the readjustment period, as per diem was abolished and there was, therefore, no necessity for moving cars when not needed unless upon orders of the Car Service Section. The extremely low figure in January, 1921, was the result of business depression and the relocation of equipment by corporate management to avoid the payment of per diem and is emphasized by the fact that this line crosses the line of "Per Cent of Ownership Cars on Home Lines" in the latter's ascendancy.

**Per Cent of Ownership Cars on Home Lines.** We have here a very clear illustration of what the effect of government ownership and the abolition of per diem would result in; this particular factor means a tremendous financial loss to the carriers of the country in the way of service performed in empty car mileage made necessary to favorably influence per diem balances and to secure return of equipment to owner's rails. On March 1, 1920, when the roads were returned to corporate management, there were only 21.9 per cent of ownership cars on home lines and coal cars needed for loading on ownership lines in the East were held empty on foreign lines in the West, while box cars needed on ownership lines for loading in the West were held empty on foreign lines in the East. Only the business depression that was experienced in the forepart of 1921 enabled the cars to get home. Had traffic held up, they would still be badly scattered and in even a more deplorable condition of upkeep. While a car pool such as established by the U. S. R. A. might be worked out under certain practical conditions, the government made a decided failure of its venture in that direction.

**Average Car Capacity.** This line merely shows the natural increase in the average car capacity of the country that can be expected for some years to come and against which, as the use of 120-ton capacity coal cars on the Virginian Railway has demonstrated, no reasonable argument can well be advanced.

**Tons per Loaded Car.** Corporate management has no apologies to offer when compared with government control in this regard as with all the influence and effort of the latter, in combination with the movement of heavy war materials and supplies, the U. S. R. A. was unable to bring and hold the average car loading up to the figure that should have been



freight cars at extraordinarily high unit costs and the resulting prohibitive interest and retirement charges. In closing his letter, Mr. Loree stated: "Conditions are now very abnormal in that during federal control all restrictions of ownership were ignored and the cars were scattered throughout the country and their repairs sadly neglected. Efforts should now be made to bring them back as promptly as possible to the owning line and every effort should be made to as rapidly as possible put them in proper repair."

An examination of the chart, prepared from the data set up in Tables I and II and showing the "Performance of Freight Train Cars in Service of Class I Railways" during the period January, 1917, to September, 1921, will not only confirm the soundness of Mr. Loree's judgment, but it also shows the relationship of the freight car situation during the federal control period, January 1, 1918, to March 1, 1920,



**Conclusion.** For the past 20 years the freight cars ordered by all steam roads and private car lines and industrials in the United States has been about as follows:

1901.....	193,439	1911.....	133,117
1902.....	195,248	1912.....	234,758
1903.....	108,936	1913.....	146,732
1904.....	136,561	1914.....	80,264
1905.....	341,315	1915.....	109,792
1906.....	310,315	1916.....	170,054
1907.....	151,711	1917.....	79,367
1908.....	62,669	1918.....	123,770
1909.....	189,360	1919.....	25,899
1910.....	141,024	1920.....	84,207

During 1920, according to the *Railway Age*, the cost for maintenance of 2,382,212 freight cars in the United States totaled \$626,746,636, or an average of \$265 per car.

When the President of the United States took control of the railroads he promised the owners that their properties would be returned in as good repair and with as complete equipment as when taken over by the government. To date this has not been done and the operations of the Class I railroads for 1920 realized a net operating income of only sixty-two million dollars, without any allowance for either interest or dividends, but which included approximately sixty-four million dollars of back mail pay from the government. This sixty-two million dollars represented the earnings upon nineteen billion dollars of property investment, which valua-

## Passenger Traffic Association Meets at French Lick

THE ANNUAL convention of the American Association of Passenger Traffic Officers was held on November 14 and 15 at French Lick, Ind., with an attendance of about 150 passenger traffic representatives from this country and Canada. The convention was opened by W. A. Russell, president of the association and passenger traffic manager of the Louisville & Nashville.

Various subjects pertaining to passenger traffic were discussed, among them being the reports from the various standing committees. Matter was submitted by the Committee on Safety Ticket Paper, the Committee on Official Digest of Fares and Divisions and the Committee on Standard Forms of Interline Tickets. Included in this report were findings relative to an improved baggage storage check and on an inexpensive method of attaching seals to trunks and valises for the purpose of preventing thefts from baggage. The latter part of this report was deferred for consideration to the annual convention of the American Association of General Baggage Agents to be held shortly at San Antonio, Texas.

The question of advertising mediums for securing publicity

TABLE II  
FREIGHT TRAIN CARS (OWNED OR LEASED BY CLASS I LINES) IN SERVICE OF CLASS I RAILWAYS IN THE UNITED STATES  
(From Information Compiled by Bureau of Economics)  
As of December 31

Freight train cars in service	1916	1917	1918	1919	1920	As of month of July, 1921
Box .....	1,021,757	1,040,818	1,038,751	1,059,296	1,048,762	.....
Stock .....	82,559	85,188	87,261	84,556	80,774	.....
Refrigerator .....	51,257	51,969	62,952	61,927	59,677	.....
Tank .....	9,507	9,062	9,886	9,714	10,380	.....
Coal .....	884,880	916,219	927,547	949,931	932,986	.....
Flat .....	117,355	114,234	111,297	109,867	104,983	.....
Other freight-carrying cars.....	85,918	84,569	87,979	85,811	83,955	.....
Total freight-carrying cars.....	2,253,233	2,302,059	2,325,673	2,461,102	2,321,517	2,440,792
Caboose cars.....	27,722	28,064	28,571	28,758	.....	.....
Total freight train cars.....	2,280,955	2,330,123	2,354,244	2,389,860	.....	.....

NOTE.—Figure for July, 1921, not strictly comparable with other data as it includes cars owned by Class II and III railways as may be on Class I lines. Comparable figure for December, 1920, would be 2,396,768.

tion has been approximated by the Interstate Commerce Commission for rate making purposes. During the latter part of 1920 a more rigid policy of economy was enforced to offset the abnormal labor rate increases as established by the Railroad Labor Board as of July 20, 1920. As a result during the first eight months of 1921, even in the face of business depression, the net railway operating income, exclusive of any provision for interest or dividends, was greatly improved but even then amounted to a rate of only 2.5 per cent per annum on the nineteen billion dollars of valuation as compared with the 5½ to 6 per cent rate of return as fixed by the Transportation Act for the March 1, 1920, to February 28, 1922, two-years' period.

While the United States Railroad Administration has for all time demonstrated in its operation of the railway systems of the country, and in fact in the existing freight car situation alone, the delusion that burdens can be indefinitely passed along, still the experiment of government control in the United States has not been without some benefits to the carriers and their owners.

KENTON, OHIO, by action of its city council, has ordered the speed of all railroad trains moving in the city to be limited to eight miles an hour. This action has been taken, it is said, with the purpose of compelling the railroads to furnish what the citizens consider adequate and necessary crossing protection. Railroads affected by the ordinance are the Erie, the Big Four and the Toledo & Ohio Central.

was discussed but owing to the varying conditions in the several sections of the country it was concluded that it would be impossible to obtain uniformity in this respect. In this connection suggestions were offered for reducing the heavy cost of printing folders and improving the present method of their distribution. It was decided that hereafter more careful supervision should be given to this problem. Suggestions were also offered by the representatives of carriers in the various sections of the country for the construction of joint passenger tariffs and the elimination of the so-called free mailing list.

The most important business conducted at this convention was a change in the by-laws of the association which provided for a standing territorial committee, the composition and functions of which are as follows:

"Standing territorial committee—to be composed of the chairman or other administrative officer of each territorial passenger association, together with not more than five members from each local passenger association territory, and three members representing water lines, whose duty it shall be to make recommendations from time to time either direct to the association or to the several territorial passenger associations on such subjects as the committee may initiate or which may be referred to it for consideration by this association or the territorial association. It shall also be the duty of this committee to present the recommendations of this association thereon and report the result to the secretary of this association."

Under the above action periodical meetings of the com-

mittee will consider questions of interterritorial concern, their recommendations to be immediately submitted to the territorial passenger associations without waiting, as formerly, for the annual meeting of the association. This will not only enable preliminary consideration by a committee representative of the entire country, but it is also certain to effect an earlier disposition of interterritorial traffic problems.

Among the subjects referred to the interterritorial committee for consideration were the following:

Minimum requirements for exclusive occupancy of drawing rooms, compartments, and sections of sleeping cars and drawing rooms in parlor cars; interterritorial clergy arrangements; parking charges for special passenger cars and coaches in use and in transit, method of computing time to be charged; uniform rule for redemption of wholly and partially unused tickets.

The following officers were elected to serve for the coming year: president, John Frances, general passenger agent, Chicago, Burlington & Quincy; vice-president, A. B. Smith, general passenger agent, New York, New Haven & Hartford; secretary, W. C. Hope, passenger traffic manager, Central of New Jersey. Following the adjournment a meeting of the fraternal section of the association was held during which a report was presented setting forth its financial status.

## Developments in the Railroad Labor Problem

WHILE comparative calm prevailed during the past week in the railroad labor situation there have been several significant developments which indicate to some extent what may be expected in the near future. Foremost among these developments are: (1) the preparation of the railroads' case in favor of a further wage reduction averaging approximately 10 per cent and the steps which are being taken to bring this case before the Railroad Labor Board; (2) the presence of leaders of the engineers' and firemen's organizations "on the carpet" before their general chairmen at Chicago, explaining why and how the recent strike orders were recalled, and (3) the continued application of the Labor Board to the question of rules and working conditions.

The first development, the preparations which the carriers are making in behalf of their requests for a further wage reduction, will undoubtedly be the means of again focusing attention on the railroad labor problem. While statistics and other material are being compiled, railroads throughout the country are notifying their employees of the proposed wage reductions, conferences between representatives of the individual carriers and their own employees are in order and the individual disputes will probably be certified to the Railroad Labor Board within the next 30 days. It is expected that the whole controversy will be placed in the hands of the Board before the end of the present year and then the Board's action in docketing and providing for hearings in these disputes will be watched closely by both the carriers and the employees involved. It will be recalled in this connection that the train service organizations have already interpreted a memorandum, issued by the Board and used to bring about the recall of the recent strike order, as promising that no further wage reductions would be considered for a time, variously estimated at from eight months to a year. In this connection, also, members of the board have pointed out that no definite promises of any kind have been made to the men, and this fact, coupled with the progress which is being made by the Board in disposing of disputes now before it relating to rules and working conditions, naturally leads to the conclusion that hearings on further wage reductions are not far off. The reactions of the labor leaders then will command the interest of railway officers and the public.

The second development indicates at the same time that the organization leaders involved in the recent threatened strike are meeting with certain difficulties within their own organizations. On November 14 more than 600 general chairmen of the Brotherhood of Locomotive Engineers and the Brotherhood of Locomotive Enginemen and Firemen met at Chicago behind closed doors to ask W. S. Stone, grand chief of the engineers, and W. S. Carter, head of the firemen's organization, why the strike scheduled for October 30 had been called off at the last minute and what assurances were given railway workers against further wage reductions and interference with existing working conditions. Extensive plans were made to keep these sessions and the proceedings therein secret, but the reports which "leaked" out indicate clearly that the brotherhood leaders were "on the carpet." None of the other three organizations, the Brotherhood of Railroad Trainmen, the Order of Railway Conductors and the Switchmen's Union of North America, parties to the recent strike threat, were represented at the meeting. Their absence, according to rumor, is due partially to factional feeling among the leaders of the five train service organizations as a result of the "satisfactory settlement" of the recent threatened strike. The effect that this development will have on the future of the railroads' labor problem can be estimated when the question of a further wage cut comes before the Labor Board and the attitude of the various brotherhood chiefs is analyzed.

Following the conference of brotherhood general chairmen, Mr. Stone announced that meeting was held to determine the future policy of two organizations in regard to wage reductions and working conditions. Mr. Stone was credited with the statement that a plan for meeting any efforts to revise existing rules and working conditions or to reduce wages had been agreed upon.

The third development of significance, the work of the Labor Board in disposing of controversies over rules and working conditions now on its calendar, is leading to much speculation as to the length of time in which the Board will take to dispose of all questions of this character.

As announced in last week's *Railway Age*, the Board recently announced that it would probably dispose of the remaining disputes as to shop crafts rules within three weeks. This statement has been interpreted by some as indicating that the Board will be ready to hear requests for reductions in the wages of all employees soon after. The Board, however, has specifically said that it would consider requests for further reductions in the pay of any class of employees only when it had disposed of the disputes over the rules and working conditions of that particular class. This means, of course, that insofar as those organizations which recently threatened a strike are concerned, the Board has not indicated what progress it has made on disputes involving these classes and consequently conjecture as to when the Board will consider further reductions in the pay of these classes is futile.

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NEWSPRINT PAPER, made in Canada, amounts to 1,000,000 tons a year, according to A. L. Dawe, secretary of the Canadian Pulp and Paper Association. He says that in the United States the quantity used is 2,500,000 tons annually.

FARM LABOR will be the subject of questionnaire forms issued by the Dominion employment service, to elicit as far ahead as possible the requirements of farmers in the harvest season in order to facilitate through this co-operation the movement of farm labor next year from the east and other points.

A large volume of grain is still to come out of the Canadian prairie provinces, the crop having been larger than seemed probable two months ago. The wheat crop in the Prince Albert district is the best for 30 years; 40 bushels to the acre being quite common.

# American Railway Association—Annual Meeting

## Comprehensive Round-Up of Varied Activities of Eight Divisions —Important Work Laid Out

THE ANNUAL meeting of the American Railway Association was held at the Waldorf-Astoria Hotel, New York, on Wednesday, November 16, with an attendance of about 200 and R. H. Aishton, president of the association, in the chair. The membership now includes 391 full members and 345 associate members, operating 314,019 miles of road. The board of directors reported that since the last meeting a Safety Section had been created within the Operating Division; and that M. J. Gormley has been appointed chairman of the Car Service Division at Washington.

The board has taken appropriate action in connection with the ninth session of the International Railway Congress, to be held in Rome, Italy, in April, 1922. The chairman, the president, the general secretary and five other persons (yet to be selected) will represent this association at Rome, and an appropriation was made for establishing suitable headquarters there.

Reports recounting the activities of the past 12 months were received from the seven Divisions—Operating, Transportation, Traffic, Engineering, Mechanical, Purchase and Stores and Freight Claims—and from the committees on automatic train control and fuel conservation.

Most of the material in these reports has been covered in accounts published in the *Railway Age* from time to time in connection with the meetings of the Divisions and Sections of Divisions; and the significant parts of the present report are those which tell of the approval, by the Association, of matters sent up from the Divisions in the form of recommendations.

The Association adopted the recommendation of the Operating Division covering rules for the draining or filling of gasoline tanks of automobiles and the loading and unloading thereof in railroad cars or on railroad premises, and amendments to the standard rules covering the use of dimmers on electric headlights of locomotives. Numbers of proposed changes in the Standard Code of Train Rules are still under consideration.

On the recommendation of the committee on grade crossing protection and trespassing the Association adopted a resolution recommending that highway crossing watchmen be deputized with police authority at crossings where such authority is desirable.

The committee on Safe Transportation of Explosives and other dangerous articles, N. D. Maher, chairman, supervises the work of the Bureau of Explosives, and its report deals largely with the doings of the Bureau (which have already been reported in the *Railway Age*). The chief inspector of the Bureau is now the agent of the railroads for filing the regulations for the transportation of explosives, etc., as a tariff, under the rules of the Interstate Commerce Commission.

The function of the Bureau has been expanded so as to enable it to formulate a code of standard specifications for containers, not only of explosives and dangerous liquids, but also for all classes of freight. In this work, the chief inspector will consult with other Divisions of the association and with associations of shippers, etc.; and his inspection force has been increased by the addition of four engineers, for the purpose of investigating present conditions.

The Medical Sections recommended a Standard Railway Sanitary Code and Railway Hospital Standards were approved.

The Protection Section's recommendations of a federal law to cover trespassing on railroad trains and also that individ-

ual roads consider the advisability of bonding receiving and delivering clerks, were approved.

The Safety Section reported that plans for a national campaign for the prevention of grade crossing accidents were being prepared. The Telegraph and Telephone Section submitted a list of specifications which have been considered and approved by the Section covering the work of the telegraph and telephone departments of the railroads.

### The Transportation Division

The General committee of the Transportation Division, C. W. Crawford, chairman, presented a long report covering the work which has been done during the past year by regular and special committees of the division, no annual meeting having been held. The subjects covered are: (1) Code of car service rules; various revisions and recommendations. (2) Restoration of old car service rule 20. (3) Computing average miles per car per day; an amendment approved by the board of directors. (4) Car service and per diem agreement. (5) Code of per diem rules; changes approved July 1, 1921. (6) Per diem forms. (7) Uniform abbreviations in interchange reports. (8) Cancellation of claims during the period of federal guaranty. (9) Settlement for car hire with short line railroads. (10) Assignment of reporting marks. (11) Mileage allowance on private cars. (12) Railroad business mail; amended regulations. (13) Car seals; rules. (14) Demurrage and storage rules. (15) Revision of storage rules. (16) Rules for loading package freight. This code of rules fills nearly 100 pages and includes 75 photographs illustrating right and wrong ways of loading freight. This code was first adopted in November, 1914, and the present report includes amendments to date. (17) Rules for loading carloads of news print paper. (18) Rules for packing and marking household goods. These rules have been printed on a placard and it is recommended that all railroads secure copies of this placard for distribution and to be posted in freight stations. (19) Reports of arbitrations under per diem rules. (20) Statistics showing the cost of owning freight cars.

The General Committee expects soon to make a report on a uniform plan to govern settlements for car hire with non-member roads; also a revision of the switching reclaim rules.

The Association approved the recommendations of this Division covering the revision of Car Service Rule 20; revision of the regulation for the handling of railroad business mail; a code of car-seal rules; rules governing the loading of package freight, and of paper, and the revision of the storage rules. The latter rules, if approved by the National Industrial Traffic League, will be submitted to the Interstate Commerce Commission for its tentative approval before being made effective.

The Traffic Division reported that a number of topics had been received from the other Divisions of the Association and had been handled by standing committees.

The Engineering Division reported a number of engineering specifications and principles of practice, which were approved. The report also included recommended principles of practice from the Electrical Section and the Signal Section.

The Mechanical Divisions' recommendations concerning the rules of interchange, loading rules and tank car specifications were adopted. The Purchases and Stores Division has distributed numerous reports to the membership on reclamation of material and material accounting; on purchase, in-

spection and distribution of cross ties; on scrap classification and on purchasing agents' office records.

The Freight Claim Division reports that the Freight Claim Association has been formally abandoned and that the experience of several months' operation as an integral part of the American Railway Association has proved eminently satisfactory. The Division has held profitable conferences with the National Industrial Traffic League, the National Association of Wholesale Grocers, and other organizations.

The Joint Committee on Automatic Train Control reports that its inspectors, working jointly with a similar inspector of the Bureau of Safety, I. C. C., has been making daily observations of the installation on the Chicago, Rock Island & Pacific, and the Chesapeake & Ohio. The final results will be used as a basis for the proposed requirements to be prepared jointly with the Interstate Commerce Commission for the installation of automatic train control devices, some 165 of which have been brought to the committee's notice.

The Joint Committee on Fuel Conservation has distributed 35,000 copies of its rules for fuel economy on locomotives. On the recommendation of the committee, plans for the organization for fuel conservation, for inspection of fuel at source of supply and preparation of a fuel schedule, and the methods of conservation were adopted.

The following have been elected by letter ballot as members of the board of directors for the ensuing three years: J. H. Hustis (B. & M.); C. R. Gray (U. P.); W. G. Besler (C. N. J.); W. R. Scott (S. P.) and W. H. Truesdale (D. L. & W.); W. L. Mapother (L. & N.).

The next annual meeting will be held in November, 1922, the place to be selected later by the board of directors.

## Malleable Castings

### Improved by Research

THE American Malleable Castings Association inaugurated an intensive research program a few years ago to improve the quality and reliability of its product, which at that time was unfortunately frequently of a very uncertain character. A central laboratory was established and Enrique Touceda, Albany, N. Y., was engaged as consulting engineer and metallurgist. With the aid of a corps of assistants and inspectors investigation was made of the

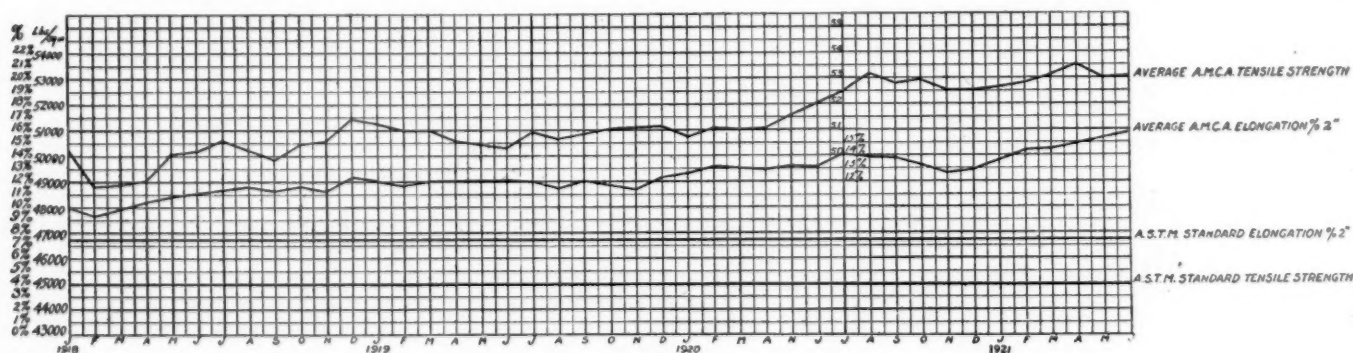
A bulletin just issued shows the most marked advance in development has been made in the past three and one-half years, during which period the product of association members as a whole has increased from an average somewhat under 49,000 lb. per sq. in. ultimate tensile strength to over 53,000 lb. and from an average elongation under 10 per cent in two inches to nearly 16 per cent.

The bulletin includes the report of bars tested for the month of June, 1921, when the highest average percentage of elongation of the association as a whole was attained, namely 15.77 per cent in two inches, or over twice the elongation, 7½ per cent, required by the American Society for Testing Materials in its standard specification for malleable cast iron. The June value for ultimate tensile strength was 53,038 lb., or 8,000 lb. in excess of requirements.

A reference to the chart showing average ultimate tensile strength and elongation for the product of the membership as a whole for 1918, 1919, 1920 and the first six months of 1921, indicates clearly how these two properties have increased during this interval despite the addition of many new members.

An interesting fact is the high percentage of perfect scores made by the members of the association. By a perfect score is meant the ability of every bar submitted by a member to equal or surpass the A.S.T.M. standard specifications of 45,000 lb. tensile strength and 7½ per cent elongation in two inches. In June of the present year 87 per cent of the contributors made perfect scores. Comparing this record with those for the same month of the previous years, it is found that perfect scores were attained by but 29 per cent of the contributors in June of 1918, 57 per cent in 1919, and 74 per cent in 1920. Out of a total of 31 contributors in June, 1918, of whom 29 per cent attained perfection, all but one made perfect scores in June of the present year. Only 2.53 per cent of all bars cast and submitted for test during June failed to pass the standard A.S.T.M. specifications as against 15.12 per cent for June, 1918.

This general improvement of the product of all members is reflected in the number of certificates that were awarded for the quarter ending June 30; sixty-one plants having been awarded the coveted certificate, the highest number yet issued for any one quarter. The awarding of a certificate is not based upon the test bar record alone, the general plant practice as reported by the consulting engineer's corp of inspectors being considered in its effect upon the product. Through



Average A. M. C. A. Ultimate Tensile Strength and Elongation by Months

foundry practices of the different members and improvements made as rapidly as investigation demonstrated their value. Test bars were regularly submitted by all manufacturers.

As a result of this work malleable castings as at present manufactured in conformity to association standards, instead of being of uncertain quality are of the highest quality and integrity. They are on a plane of dependability with the best mild steel castings or forgings, while they can be machined at almost double the speed of either.

this safeguard, the purchaser is assured that the test bar record of each day's production can be considered as truly representative of the castings. Castings furnished by certificate holding plants are designated as "certified."

Nothing could more clearly indicate the value of a research program consistently carried out and rigidly applied than a comparison of this most recent report with those that have preceded it. The net result of this work has been to raise to a high level the standards of the industry, and to increase materially the commercial applications of its product.

# Selecting Designs for Electric Locomotives\*

## Merits of Various Wheel Arrangements of Steam and Electric Locomotives Determined by Tests

By A. W. Gibbs

Chief Mechanical Engineer, Pennsylvania

THERE ARE CERTAIN questions as to electric locomotives such as the transmission of power from the motor to the driving wheels and the behavior of the complete locomotive considered as a vehicle, particularly with reference to its effects on track structure, which have not received adequate attention. These problems may best be studied with reference to approved types of steam locomotives and this paper deals especially with the results of a comparative trial of steam and electric locomotives which was made in 1907 to secure information in connection with the design of electric locomotives for the Pennsylvania terminal in New York City.

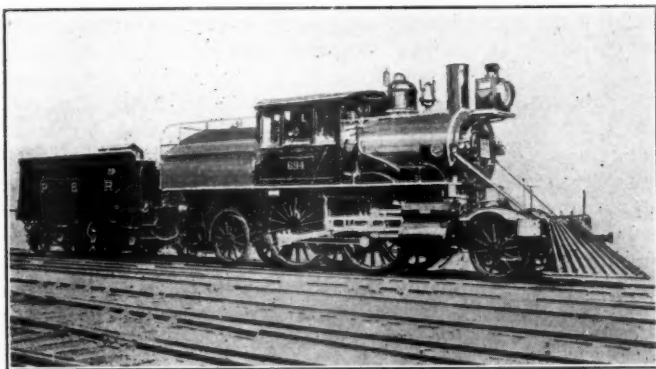


Fig. 1. Columbian Type (2-4-2) Locomotive

It should be understood that at that time but a limited number of types of electric locomotives were available for comparison.

The greatest difficulties of the electric locomotive, other than financial, are mechanical rather than electrical. None of the mechanical arrangements to be described are ideal by any means, and we must not mistake the absence of heavy repairs in the early years of an installation as truly representative of the expenses which will be met later on.

At first blush it would seem that nothing could be more ideal than the connection of a revolving armature and a revolving driving axle. As a matter of fact, it is not at all simple for the reason that the driven axle not only revolves but is displaced bodily as well as angularly in the vertical plane. Moreover, these displacements of axles and wheels, which are not spring supported, occur suddenly, due to irregularities in the track, hence it is desirable to reduce the unsprung weight to a minimum.

The difficulties from these various disturbances are encountered principally at the higher speeds and are those with which we shall mainly deal. The different methods of communicating motion from the motor to the driving axle may be considered under the following designations:

A. That in which the armature is carried directly on the driving axle, the axle boxes sliding in vertical pedestals and the face of the field coils being parallel vertically on each side of the armature. In this construction the whole of the field coils can be rigidly secured to the frame and above the supporting springs. This arrangement permits the easy removal of the driving axles and wheels with the least dis-

turbance of other parts. The disadvantages are the increase in the unsprung weight on the axle and the low center of gravity of the entire motor. So far this drive has been confined to direct current operation.

B. The geared drive, with the gear on the driving axle engaging a pinion on the motor, one end of the motor frame being carried in bearings on the axle, the other by proper nosing on the truck frame. The disadvantages of this arrangement are the low center of gravity of the motor as a whole, the considerable unsprung weight and the gear wear, principally that of the pinion. Usually the motors are in pairs between pairs of axles, and in consequence the gyratory disturbance is less than where the motor center coincides with that of the axle. This general type of drive, which is in common use in street car operation is, undoubtedly, the one having the widest application and operates with both alternating and direct current.

C. The quill arrangement in which the whole motor is concentric with the axle in its normal position, but is not directly connected, the axial opening of the armature being larger than the diameter of the axle. The physical connection between quill and axle is by springs interposed between pockets in the periphery of the driving wheel center and the arms of a revolving spider connected to the armature. These springs not only transmit the driving torque, but also compensate for the axial disturbance of the driving axle. In some installations the motor frame as a whole is spring-supported, so as to assist in assuming a position concentric with the axle. The objections are the low center of gravity of the motor, the distance between the motors measured from the center of the truck, the fact that the motor can be removed from the axle only by drawing one of the wheels, and that

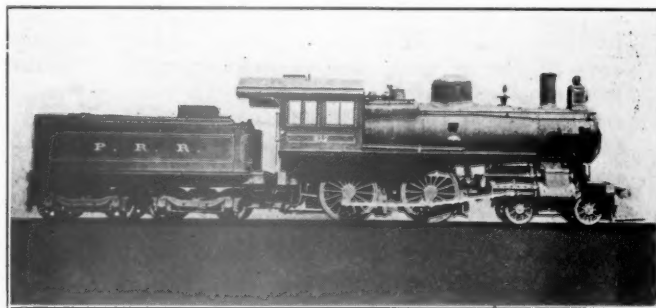


Fig. 2. American Type (4-4-0) Locomotive

any lack of concentricity between the quill and the driving axle puts a continued and varying inertia stress on the torque springs.

Both arrangements "A" and "C" have the further disadvantage that the ratio of the speed of the motor to that of axle is unity, thus involving higher motor weights than when this ratio is greater.

D. A modification of the quill arrangement in which the quill is driven by one or more motors through spur and pinion arrangement. The advantage of this is that the motor parts are much more accessible than in the concentric type, and that the speed ratio of motor armature to driving axle may vary through a fairly wide range, and that where two

\*Abstract of a paper read before the Franklin Institute, Philadelphia, Pa.

motors drive the same quill the tooth load is that of a single motor. The disadvantage is the increased axle distance due to the width over two motors.

E. That in which one revolving element is a jack shaft driven by one or more motors and coupled by crank pins and rods to the crank pins of driving axles. The jack-shaft when placed in the horizontal plane of the driving axles maintains a fixed position relative to the driving motor or motors. The relation between them may be a second set of rods coupling the jack-shaft cranks to a similar pair on the motor; or the jack-shaft may be driven through spur or herring-bone gears cut on the periphery of the disk engaging pinions of one or more motors. These rod connections have been used more largely in Europe than here. The jack-shaft and rod combination is an exceedingly rigid one and the wheel arrangement forms a more rigid connection than in the case of steam driving through pistons. The advantages are that the removal of driving wheels does not involve electric complications, and that all driving wheels in the group act together, so that the full adhesion of the group is secured, and it is probable that a higher total adhesion will be available from groups than from single units where the slipping of one unit reduces the total adhesion. The disadvantages are mechanical complication involving exact quartering of all wheels and jack-shafts, the necessity of equal diameter of all driving wheels, and the heating of pins and maintenance of rod bushings. Contrary to expectation the maintenance of jack-shafts involves no great difficulty.

In no type of electric locomotive drives are there counterbalance disturbances due to counterweights, as only rotating masses are in motion.

#### Starting Power of Locomotives

As governed by adhesion the motor-driven axle in starting has a relatively high adhesion because of the uniform torque of the motor. It is a well-recognized fact that static weightings of locomotives show considerable discrepancies on individual axles. How this discrepancy varies in moving locomotives is not known.

Assuming that the motor torque is greater than adhesion

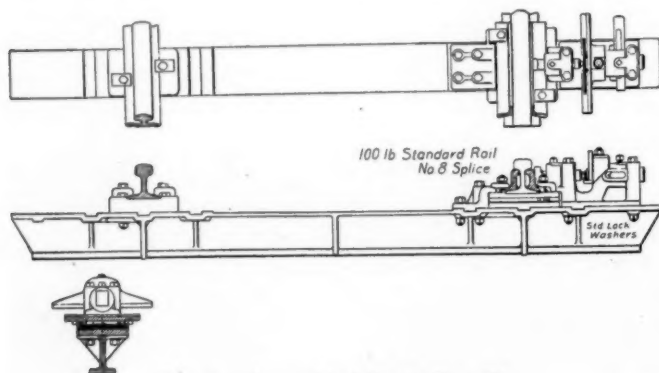


Fig. 3. Assembled Recording Tie

resistance, we have, where axles are individually driven, the adhesion of the axle with the lightest loading governing the adhesion of the group. Where, on the other hand, there is a rod connection between the various axles, we utilize the full adhesion of the group. The presence of the coupling rods does not preclude the application of power to any axle or number of axles, though the usual practice has been to apply all the power to one or more jack-shafts and from them to a group of axles. This utilization of the full adhesion in starting is a matter of importance in any type of locomotive, as usually they will pull heavier trains than they will start.

In the earlier days of steam locomotives the aim was to keep the vertical center of gravity low with the idea that this was conducive to stability. Not until the Reading Railroad in its introduction of the wide firebox type of locomotive was

forced to elevate the boiler so that the firebox would clear the driving wheels, was it recognized that this change had materially improved the steadiness of the locomotive as a vehicle. The reason, of course, was that the center of gravity of the parts above the springs acting as an inverted pendulum failed to respond to the many small disturbances which would otherwise have produced side shocks. Since that time designers have not hesitated to raise the center of gravity of the parts above the springs, and the present limits are chiefly those of overhead clearance.

One other steam locomotive lesson that seems to have been forgotten was that with a short symmetrical wheel arrangement with heavy overhanging weights distributed longitudi-

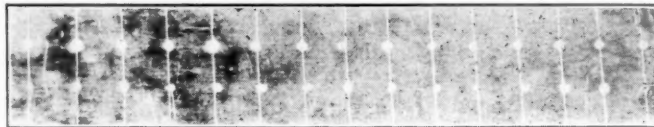


Fig. 4. Metal Strip Used in Recording Tie, Showing Impressions

nally of the whole machine, excessive lateral oscillations were set up which endangered the track and locomotive. Figs. 1 and 2 show locomotives of the Columbian or 2-4-2 type and the American or 4-4-0 type. Here are two types of almost the same total wheel-base with nearly the same height of boiler above rail. The weight of the 4-4-0 type was but 7 per cent greater than that of the 2-4-2 type. The 2-4-2 type was so unstable that it was soon condemned. The 4-4-0 type is notably a steady-running one and its performance will be graphically shown later. The reason for the difference in performance is probably that the wheel arrangement of the 2-4-2 was symmetrical, while that of the other was not.

When it became necessary to design locomotives to operate the New York terminal of the Pennsylvania Railroad two electric locomotives were designed and built.

Both consisted of two four-wheel trucks with motors for each axle. In both cases the trucks were articulated at the center and carried the necessary draft gear at the ends, thus the pull was transmitted through the frames of the trucks and not through the superstructure.

In one of these locomotives the motor drive was by gear, the second method referred to. The other was driven by four concentric motors through quills.

The wheel-base of both were identical, that of the trucks 8 feet 6 inches and the total 26 feet 1 inch.

Both operated by direct-current at 650 volts through third rail.

About the time that they were completed reports of troubles elsewhere made it very desirable that we should ascertain their performance before constructing the large number of locomotives necessary for the operation of the tunnels.

#### Method of Determining Lateral Impact

The line of the West Jersey was available for track and current, and it was decided to construct an experimental track with ties which would make some permanent record of the lateral impacts of the locomotives. As it was expected that the bad oscillations would occur on curves, if anywhere, only one end of each of the ties was arranged to register.

Fig. 3 shows one of these ties, the end at the outer rail being so constructed that the rail was free laterally, resting on rollers, resisted against outward movement by a bracket carrying a strip of boiler plate, movable longitudinally at will. Against this strip rested a one-inch steel ball which in turn bedded in a plunger bearing against the outside face of rail. (Fig. 4 shows one of the impression plates carrying the record of 30 runs.)

The record obtained with this device was a species of glorified Brinell test, the depth of the impressions of the one-

inch ball in the boiler plate being taken as a measure of the impact. After each run the plates were slipped longitudinally and adjusted to touch the ball, each single plate taking the record of 30 or more runs. It is to be clearly understood that this method carries with it some decided limitations which must not be overlooked. Each run, whether with one or more vehicles, made a single impression on each plate. While it was assumed that the indentation was that of the heaviest impact, it is possible that two or more impacts occurred on a single point with some cumulative effect. In some of the runs it is believed that this was the case. There was also some question as to the interpretation of the impressions. They were calibrated by static loading in the testing machine and also dynamically by falling weight.

The recording ties, 80 in number, extending over five rail lengths, or a total distance of 165 feet, were laid on a one-degree curve in the southbound track, near Franklinville, N. J., in 1907. There were 16 of the recording ties to each rail-length and at every splice on both rails the two ties at the splice were so located that the joint between the rails came between the ties, which at this point were 20 inches apart. The other 14 ties were spaced as uniformly as possible, taking into consideration the necessities for spacing at the rail joints. Tie No. 1 was placed about 28 ft. south of the point of curve. The super-elevation of the outer rail of curve was 3 in. and the elevation of the rail began at a point about 250 ft. north of the point of curvature.

Tie plates were used on wooden ties immediately south of the test track for one-quarter of the distance around the curve. The ballast used at the curve was gravel and cinder.

The rails were P. R. R. section, 100 lb. to the yard, in good condition. It was specified in arranging the experimental track that it should be lined up in about the best average condition of track used on this piece of road.

The tangent track approaching the curve from the north consisted of 100-lb. rails supported by wooden ties, single spiked. The substructure was of broken stone ballast with the exception of about 1,500 ft. north of the test track, in the vicinity of Clayton, where most of the runs were started and where cinder and gravel ballast were used.

After the completion of the runs on the curve, the recording ties were removed to the tangent north of Franklinville station, where the trials were completed. At this location the track consisted of 100-lb. rail with broken stone ballast. The speed record was obtained by means of a series of trips, operated by the locomotive passing over them, which broke and made the circuit going to the chronograph. These trips were located such distance apart that at a speed of 100 miles per hour the time between trips would be one second. Four trips were used for the tests on the curve and seven for those on the tangent, the idea being that failure of one or two trips would not vitiate the record of the run.

Other apparatus used in the tests consisted of speed recorders on the locomotive, which were used only to obtain approximate speeds; and in some of the runs, there was placed on the locomotive a seismograph having three pendulums, giving vibrations in vertical, transverse and longitudinal directions.

*The second and concluding part of this article will include descriptions of the locomotives tested and the results of the tests.*

## "Passing the Buck—Perhaps the Dividend"

### Lessons of Experience for the Operating Officer Who Would Not Be a Slave to the Typewriter

AT THE MEETING of the New York Railroad Club, in New York City, on November 18, the address was by Howard Elliott, editor of the New York Traffic Club Bulletin and formerly Inspector of Transportation on the San Pedro, Los Angeles & Salt Lake Railroad. Mr. Elliott was for 16 years in the railroad service, but during the past four years has been in other business. The spirit and tone of what he said may be guessed from the title. Following is an abstract of the address.

Two tendencies are doing incalculable harm to the railways' best interests; one the hostility to suggestions for improving the service and the other the disposition to shift responsibility, especially in matters of public relations. Quoting the views of William Howard Taft, Louis D. Brandeis, W. Jett Lauck and Henry Ford, the speaker declared unwise the general attitude of railroad officers toward criticisms such as those made by these men. Instead of admitting that there might be a modicum of truth in what Mr. Brandeis said, railway men set their faces like flint against his suggestion that large savings could be made in railroad operation; this merely because it came from a man who had had no experience in the business. To admit error would have done violence to long established theories of railroad pride; but it is along the pathway of criticism that real progress lies. The railways replied to Mr. Lauck that two wrongs would not make one right. This, however, did not settle anything. What was needed for general enlightenment was a frank statement that there was a kernel of truth in Mr. Lauck's criticisms and that many savings could be made. Even Mr. Ford may have some ideas that can be copied with profit. We must get away from the idea that

an admission of error is a confession of weakness; throw off the cloak of infallibility.

The speaker next discussed a parasite which he called the "red-tape-worm." This, said he, is one of the worst evils in railroad operation. It is gnawing at the vitals of railroad efficiency. Everybody admits its existence, but usually they call it a necessary evil. In discussion with a prominent operating vice-president the speaker said, "I ventured the suggestion that if I were placed in charge of a railroad I would make all of my employees 'generals,' and I would charge them all with the responsibility of producing dividends. I expressed the belief that the most logical method of accomplishing real efficiency was by consolidating offices and by making such changes in the organization as would allow officers to broaden the scope of their authority without fear of criticism. As for employees, each one should take a deeper interest in the company's affairs and pass on to others only those things which he is sure that he himself cannot perform. I cited sample of daily report I believed any division official could make if clothed with the proper authority and inspired with interest. The report read as follows:

1. Rode fruit train from A to B. Encountered wreck at X. Interviewed the injured passengers and settled with each of them for \$10. Looked after the transfer of damaged freight, wiring freight claim agent and agents at origin and destination.

2. I find trainmen are not keeping in touch with interpretations of the 16-hour law as rendered by the I. C. C. Posted 6 of them while waiting for the wrecker.

3. At G, a blind siding, found three unclaimed cars lumber. I consulted a Chicago telephone directory, found names of consignees therein, and immediately wired freight claim agent. Cars were disposed of same day.

4. On No. 9 were only 15 pay passengers. On No. 10 there were 20. Recommend conference to consider taking these trains off. See separate report of revenues and expenses, and suggestions as to handling mail and express on other trains, also proposed line of defense in case we are called upon to restore them.

While at X, went through the shops. Notice 10 machines which need

safe-guarding. See separate report. I find that reports of trivial accidents are going by telegraph, thus tying up a hundred-dollar operator at each end of the line. Suggest central committee consider having such reports come by mail. I attended meeting of Division Safety and Efficiency Committee, and participated in the discussions.

"I rode No. 1 from E to F. While in diner overheard drummer tell of five cars canned goods just sold, and the routing of which he controlled. At favorable opportunity, told him of the advantages of our line, secured some of his firm's letter heads, borrowed dining conductor's typewriter, and after making three copies, handed him my fountain pen with which he signed routing order. Forwarded the original in one of his own envelopes to the shipper, other copies to general freight agent. Estimated revenue, our proportion, \$500."

I may add that I have done practically all those things myself except to settle with passengers injured in a train accident."

Mr. Elliott here referred to the notable case of the late Thomas J. Potter, the former well known general manager of the Chicago, Burlington & Quincy, who secured early promotion because he took it upon himself to settle claims, after a collision, without waiting to get authority.

However, said the speaker, his argument did not convince his friend the vice-president. He said: "I don't believe in your general idea. If men would use their heads it would work, perhaps; but nothing is so disastrous as the control of technical specialists by ignorant generalists; and the same is true of intermeddling. There is an immense desire for dominion among all men. A friend of mine three years ago organized his work so that every superintendent was to be supreme on his division; but after three years he has reorganized it. The superintendents are now supreme with respect to the function that belongs to them, the *conduct* of transportation. They no longer play with the mechanical matters, and they could not do else because they didn't know how; and if they had known they might better do something else and leave technical details to others. There must be the closest co-operation. The superintendent *should* be the chief man on the division. The mechanical man *should* be his loyal lieutenant and all that, but the superintendent *should not* interfere with the prerogatives of the mechanical specialist. I've tried both plans, and I have seen both tried in dozens of cases. One tends to the glory of men, the other to the welfare of the stockholders. Both things can be accomplished. The man can have his glory, the stockholder his dividends."

Yet, said the vice-president, this man made the mistake of introducing a special design of locomotive without taking the advice of his trainmasters, and the experiment was a failure. It is true that the trainmaster cannot design a locomotive; but he is the man who uses the engines, and by all rules of reason the opinion of transportation department officers should have been sought and carefully considered. The highly trained ultra-specialist is no more efficient than the specialist with a broad general basic education; but he is apt to be less efficient because of the monotony which a repetition of the same tasks invariably develops. Again, one disadvantage of the departmental system is that it fails to train men for those positions where authority is converged.

#### Bad Influence of the Typewriter

The vehicle for red tape and shifting responsibility, said Mr. Elliott, is the typewriter, a small manually operated machine which repeats parrot-like anything it is told. Typewriters move no freight, yet there are on some roads as many typewriters as locomotives. The typewriter is the buck passer's chief ally. One of the best things which could happen to a railroad would be to reduce the inter-office correspondence. Officers now tied to their desks handling papers would be released for road service.

Mr. Elliot said that he was interested once in listening to the dictation of a clerk in a general manager's office sending contracts to the auditor, each with a letter of transmittal. Wishing to avoid monotony he varied the form of his letter. One read "with this I hand you," and others, "with this you have," "enclosed please find," "attached hereto is," "I enclose herewith," and "I beg to send you." There was no necessity for any letter of transmittal.

While on the Salt Lake Route Mr. Elliott drew up a form which avoided the necessity for letters and yet kept the general manager's files complete. It was called "Disposition of papers memo." There was a blank space for file number and subject, followed by the words: "Papers to Mr. ——— today with request that he—

- (a) Note and return.
- (b) Confer with the general manager.
- (c) Approve as to form, legality, description.
- (d) Take necessary action and advise result.
- (e) .....

Then a date line, and place for initials of the person handling the file.

Letter writing is expensive. According to the figures of a prominent paper manufacturer, the cost of producing an average business letter, using a good grade of paper and envelope, is a little over 18 cents, itemized as follows.

Labor; stenographic service.....	\$0.0727
Office overhead .....	.0727
Postage .....	.02
Printing or lithographing letters and envelopes.....	.0062
Paper and envelopes.....	.0126
Total .....	\$0.1842

In the office of a general superintendent on one occasion the first 100 letters in the copy book showed:

Plain letters of transmittal referring the matter to others for attention..	40
Asking or answering simple routine question.....	20
Enclosing agreements to heads of departments in same building for approval .....	20
Approving train service, details of which had been arranged by division officers .....	10
Definite rulings on sundry matters.....	10
	100

Most railroad letters are written by clerks who sign the name of their chief. This system has many stout defenders, but it seems to me that it breeds disrespect for signatures, and that it places officers of one unit below clerks of the next higher unit. The chief clerk who is qualified should, said Mr. Elliott, have a title and do business in his own name.

#### Relations With the Public

There is much passing of the buck in matters of public relations, the speaker continued. There are many popular vagaries which need explanation, and every railroad officer has a serious duty in this respect. It is not a valid excuse to say that you cannot write well; or that you cannot talk effectively. The officer who feels incompetent to present the facts about the railroad situation truthfully, interestingly and effectively, should study the problem and then try his hand at writing and speaking. A man can do almost anything if he will try. Two men were talking one day about a fox hunt. One of them said: "The dogs pursued the fox, and when they got close enough to snap at his heels the fox climbed a tree." "Hold on," said the other, "foxes don't climb trees." "But," answered the first, "this fox had to."

The superiority of the Allies over the Germans was due, in no small part, to the aptitude of the Allied soldiers in "carrying on" in new and strange situations. The railroad officer should practice putting his thoughts in writing. To write on any subject, the important point is to begin; having begun, then the process of amplification, elimination and revision comes easier. The magazines published by different railroad companies now furnish a golden opportunity for employees to show their ability in writing; writing where the superior, and frequently the public, will see what is written. Perhaps an employee thinks he cannot discuss capitalization and freight rates; but at least he can write or speak on better packing and marking of freight.

This educational work presents a stirring appeal, said the speaker. "The railroad business is fascinating. It has splendid traditions which need to be maintained. The railroads are rich in history and romance, and I am hopeful that they will continue to attract the youth of our land."

# Utilizing Tractors and Trailers for 100 Ft. Hauls

The New Haven Railroad Departs from Usual Methods in  
Handling L. C. L. Freight at Boston

THE USE OF tractors and trailers for hauls which rarely exceed 100 ft. is the outstanding feature of the methods followed by the New York, New Haven & Hartford in the operation of the outbound houses of its Boston, Mass., freight terminal. Ordinarily, operating officers associate the use of the tractor-trailer system of handling freight with long hauls. Therefore, considerable interest is attached to the Boston installation, where the hauls are decidedly short.

The Boston freight terminal is almost exclusively a city freight proposition, the transfer tonnage amounting only to a negligible 3 per cent of the total tonnage handled. In



When Long Hauls Are Necessary, the Trailing Method of Handling Is Used

normal times the operation of this terminal involves five outbound houses containing 111,000 sq. ft. and seven inbound houses having 234,000 sq. ft., and four piers with 650,000 sq. ft., an approximate total of 1,000,000 sq. ft. of floor space for the entire terminal. A 300-car set-up can be taken care of readily at the five outbound houses and, at various times, more than 400 cars have been loaded through the outbound houses and piers in one day, while 200 cars were unloaded into the inbound house in the same time.

Tractors and trailers are used only for the handling of outbound freight. At present, owing to the business depression, all such freight is handled through houses No. 1 and No. 6, the largest of the five outbound houses. Each of these two houses is 810 ft. long and 40 ft. wide, with platforms 150 ft. long and 175 ft. long, respectively, provided at one end. These platforms are utilized in the receipt of freight, the total area of the platforms being 7,800 sq. ft.

No. 1 house is served by four tracks and No. 6 house with five tracks. The present daily set-up at No. 1 house consists of 76 cars with an average daily tonnage of 530 tons, while at No. 6 house the daily set-up involves 120 cars and 800 tons of freight.

Each of the two houses is provided with 52 doors on the driveway or the receiving side, and 20 doors on the track or loading side of the houses. Thus it will be seen that the operation is funnel shaped, with the small end towards the cars, making it necessary to handle through the 20 rear doors, and into the cars, the tonnage unloaded by teamsters through the 52 front doors.

The plan of operation in the two houses is predicated on securing a direct haul from the teamster's trucks, through the house and into the proper car, avoiding longitudinal move-

ments through the house wherever possible. To this end cars for a particular destination are always spotted at the same location and directly across the house from the door or doors assigned for the receipt of shipments for the particular destination. In other words, No. 1 house is designated as the house which will receive shipments for certain destinations, while No. 6 receives only freight for certain other destinations. Outbound shipments must be delivered to designated houses at points within a reasonable distance of the proper door. In this way confusion and congestion resulting from crossing traffic are eliminated. Sufficient variation in deliveries is, of course, permitted to avoid the stopping of teams at an excessive number of doors. The arrangement is subscribed to by the drivers who co-operate by loading their trucks by house and door destination, as far as possible, following instruction books furnished by the railroad.

It is obvious that with the short hauls from the point where freight is delivered to the railroad to the destination car, which result from this plan, the arrangement is advantageous to the shipping public inasmuch as it is possible to receive freight until a late hour in the afternoon and still get it loaded for movement that night. But, formerly, even with this apparently desirable arrangement doors and floors become blocked with freight, especially in the late hours of



The Trailers Are Loaded at the Receiving Doors by Teamsters and One Freight House Man

the afternoon, since approximately 60 per cent of the outbound tonnage is offered between 2 p. m. and 5 p. m.

The former method of receiving freight, in effect prior to July, 1918, was to accept all outbound freight at the assigned doors as dropped on the floor by the teamsters. The freight was then checked up by the receiving clerks who signed the bills of lading. In order to keep the doorways clear it was necessary to move the freight back into the house to await rechecking and loading. This moving back of the freight was done by the doormen who used hand trucks for this work. The loading into the cars was done by the so-called gang system after a rechecking of the shipment against the shipping order.

Two distinct operations were involved in this method as well as much lost motion occasioned by the necessity of moving the freight back to the center of the freight house

floor. The delivery of shipping orders to the billing department was also delayed until late in the day.

In July, 1918, the operating plan was changed and manually operated drop-trucks were installed. Under this plan four-wheel trucks were provided and placed at the receiving doorways. This enabled the teamsters to unload from their trucks direct to the drop-trucks, thus keeping the freight off the house floor. Doormen, reduced 50 per cent in number, kept a sufficient number of trucks at the doors while a tallyman checked the number of packages, chalked the freight with the number of the outbound car and signed the bill of lading, thus eliminating one check and one handling of



**Because of the Short Hauls, It Is Generally Advantageous to Push the Trailers**

freight. The loaded trucks were then pushed away from the doorway and subsequently were pulled into the cars by laborers assigned to that duty.

While the drop-truck method proved greatly superior to previous methods it was still impossible, during the late afternoon when the heavy flow of freight was offered, to keep abreast of receipts with the loading. Consequently, it was decided to replace the man power trucks with tractors and trailers. These were placed in service on September 1, 1921.

#### Results of Tractor-Trailer Operation

While prior to the introduction of the present system approximately 10 per cent of the outbound freight was held over daily because of the inability to clean up, it has been possible, since the installation of the tractors and trailers, to keep the floor free of freight. The necessity of pushing freight back into the house has been eliminated under the

new plan and a substantial saving in wages paid to labor has also been effected. Furthermore, the likelihood of loss and damage incident to the pulling down and overhauling freight standing on the floor in order to load complete shipments without splitting them up, has been obviated. A decided improvement also has been made possible in the billing department through the ability to deliver shipping orders earlier, thus reducing the likelihood of error and omission resulting from the hurry incident to train departure. In addition the cost of handling outbound tonnage has decreased from 67 cents per ton in July, 1921, to 50 cents per ton as a result of the tractor-trailer operation.

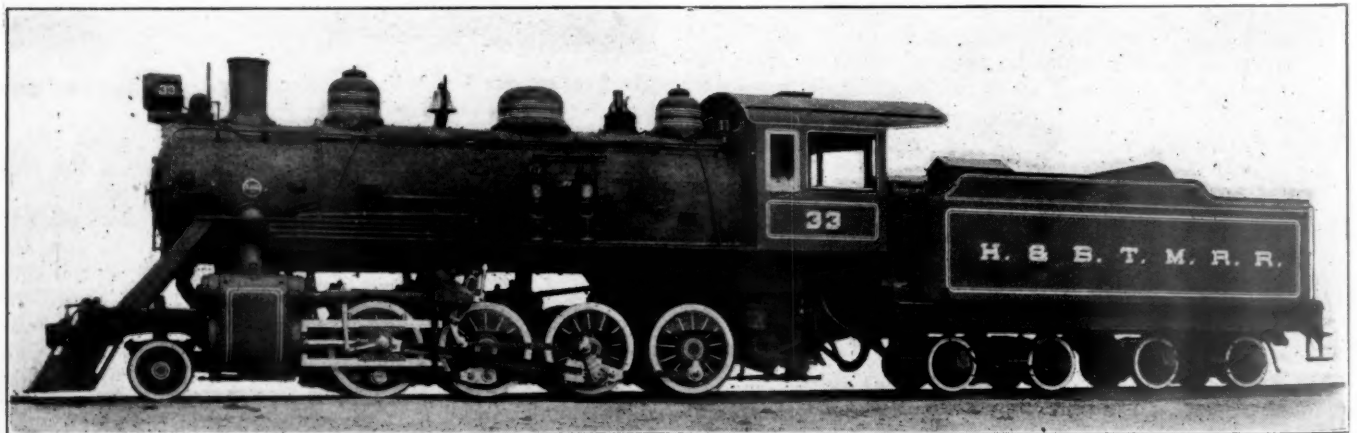
With the tractor-trailer operation in the two 40 ft. wide houses which load to four and five strings of cars, with the freight received nearly opposite the car, and with an approximate haul of 100 ft. the houses have at all times been kept clear of congestion and there is no freight on the floor to run around except certain bulky articles which the present 15 in. high trailers cannot accommodate. Trailers 11 in. high from floor have been ordered to afford lower trucks on which to handle such bulky freight as barrels, bales, etc.

The house equipment includes a charging station in each house operated. The tractors are put on charge by a freight house man at the close of the day. A second class electrician, reporting at 11 p. m., is responsible for their proper operating condition. No. 1 House, handling 530 tons of freight, requires two tractors and 120 trailers while No. 6 House, with 800 tons, has three tractors and 180 trailers.

Empty trailers are always kept at the freight house doors and are loaded by the teamsters and one freight house man. A separate trailer is given each shipment regardless of size and, after the block number has been chalked on the freight, the truck is moved by the tractor to designated car.

There are two men on the tractors; a driver and helper. The latter makes the hitches and steers the trailer when it is being pushed. At Boston pushing, rather than trailing, is the prevailing method of procedure because of the short haul and the absence of any turn around platform on the farther side of the cars. The tractor will turn in a car but the push method has been found expedient as the tractor, after pushing the load into the car, backs out and repeats, keeping busy all the time in one part of the house or another. Stevedores, one for each ten cars, unload the trailers and push the empties back into the house.

The Boston freight terminal is operated under the general supervision of G. Marks, assistant to the general manager, and F. S. Hobbs, superintendent. William King, agent, is in direct charge.



**Consolidation Freight Locomotive for Huntingdon and Broad Top Mountain**

Two of these locomotives have lately been delivered by the Baldwin Locomotive Works. They are designed for coal traffic in western Pennsylvania on a road having 18-deg. curves, 1.86 per cent grades and 85-lb. rails. The locomotives weigh 190,700 lb., of which 170,100 lb. are on the drivers, have a tractive effort of 40,600 lb., cylinders 22 in. by 28 in., 51 in. drivers, boiler pressure 190 lb., evaporative heating surface 2,237 sq. ft., superheating surface 503 sq. ft. and grate area 46.7 sq. ft.

# Railroad Bill Discussed on Floor of Senate

## Skepticism About Passage of Bill at This Session Due to Tactics of Senator La Follette

WASHINGTON, D. C.

SENATOR CUMMINS' SPEECH in the Senate in explanation of the bill to authorize the Railroad Administration to sell its railroad securities was completed on Monday, November 14, and general debate was begun on the following day. Both at the White House and among the Senate leaders the hope was expressed that the bill could be passed at this session and in time for an adjournment of Congress by Thanksgiving Day, but it is apparent that Senator La Follette will lead a fight against the bill that will consume so much time that there is much scepticism as to the possibility of any action on the bill before the next session, which begins on December 4. As was expected, Senator La Follette and others have taken advantage of the opportunity to propose as amendments to the bill various changes in the Transportation Act.

Senator La Follette introduced three amendments, one of which would repeal Section 15a, the 5½ per cent rate-making section of the interstate commerce act, another of which would amend the provision under which the Interstate Commerce Commission has ordered increases in intrastate rates, and another which would provide that all funds made available under the bill shall be expended only in payment for labor and materials for the maintenance, repair and renewal of equipment, roadway and structures of the carriers and that all labor shall be performed in the shops or on the roadway or on the structures of the carriers making such repairs. This is designed to prevent contracts with outside companies.

Senator Kendrick also submitted an amendment to substitute for paragraph 3 of Section 15a a provision that the commission shall from time to time determine what percentage constitutes a fair return, such percentage to be uniform for all groups or territories, and adding to the considerations which shall govern the commission in making rates, the following: "In order not to prejudice the interests of, impose an unreasonable burden upon, or discrimination against, shippers, producers and consumers."

Senator Jones of New Mexico also introduced an amendment to eliminate the proviso of the fourth section and make the long and short haul rule absolute.

### Senator Cummins Explains

Senator Cummins said that when the President comes to determine whether in the case of a particular railroad he will fund any part of the indebtedness of that railroad to the government he will consider its financial condition and if he finds that it is not necessary to extend the time on any part of that indebtedness he will not extend it, but he assumed that in the future as in the past he will find some railroads which do need that indulgence and he will fund a part of that indebtedness within the range of \$500,000,000. If he pursues the plan he has hitherto pursued, the amount funded would not be great. At any rate, he thought it would be found in the public interest to fund at least from \$75,000,000 to \$150,000,000. Suppose it were \$100,000,000, he said, that would have to be added to the \$279,000,000 which the government owes the railroads above what the railroads owe the government and to pay this amount the President must either sell railroad securities or go to Congress for an appropriation. If he does not exercise his judgment in favor of funding at all, the Railroad Administration will be \$125,000,000 or \$130,000,000 short of funds necessary to pay the admitted debts to the railroads.

Some of the railroads, Senator Cummins said, have plenty of money. They were prosperous up to the first of September,

1920, when the government guaranty expired, but since that time the roads have earned less than enough to pay the interest on their bonds and he ventured to predict that when this calendar year closes, if the rates which are in existence now be maintained, the railroads will not have earned more than enough to pay the interest upon their bonds.

In reply to a question as to whether the President will be expected to sell railroad securities to anybody but the War Finance Corporation, Senator Cummins said that it may not be necessary to use the War Finance Corporation at all. The President in the last two months has disposed of over \$100,000,000 of equipment trust certificates to private investors merely with the assistance of the War Finance Corporation, but without the War Finance Corporation buying them. The bill provides that the President may sell other securities in a similar way.

One of the amendments to the bill as passed by the House, Senator Cummins said, is intended to provide for partial payments to the railroads because the bill in the form as passed by the House would prohibit such payments.

### Advances Only to Needy Roads

With regard to the railroads which have accumulated a surplus and can pay the government the advances made for capital expenditures during federal control, the President will not fund the indebtedness. "The act," he said, "is only intended to give that measure of relief which I think every reasonable man will approve as necessary to keep our railroads in operation."

"The fact is that at the close of federal control the government owed the railroads, from its present point of view and its present interpretation of the contract, a sum approximating \$1,400,000,000; and from the railroads' point of view, with their interpretation of the contract, and after giving credit to the government for all the amounts due from them to the government, the government still owed them more than a billion dollars. The uncertain part of it all has been in the claims of the railroads for undermaintenance; for the failure, as they allege, on the part of the government to maintain the properties in as good condition as they were in when they were taken.

"There has been no controversy with regard to the amount of compensation. Under the bill that was passed in March, 1918, we agreed to pay the railroads as a whole more than \$900,000,000 a year, and that and the money taken over at the time the railroads were surrendered to the government and the admitted undermaintenance make up chiefly the sums of money due from the government to the railroads; but you can take it as absolutely true that on October 1, as nearly as could be estimated, if the government shall in the future require the payment of all the money now due from the railroads on account of additions and betterments, we would still owe the railroads more than \$279,000,000. We have not the money with which to pay it, and we shall either have to dispose of a part of the securities which the President now holds or we must make an appropriation with which to pay it; and, as I remarked the other day, in that alternative I think there can be no difference of opinion as to the wisdom of disposing of the securities, assuming that the President can and does, as the bill provides, dispose of them without loss; that is, at the par at which the government took them and without recourse upon the government."

All of the Senate committee amendments to the bill as passed by the House were agreed to on November 15, but

on November 16 the bill was displaced to give way to the Newberry controversy.

Senator Cummins put into the record a letter from Director General Davis explaining in detail how the balance in cash which will be required to complete the final settlements between the Railroad Administration and the carriers as of October 1, \$279,851,593, is arrived at, as follows:

In the accounts which the Railroad Administration has with each carrier, the amount due the administration for additions and betterments appears as a charge against such carrier, so that estimates made by the Railroad Administration as to the funds necessary to complete final settlements have always been based upon collecting from the carriers the amount of the additions and betterments, and the sum stated as necessary to conclude final settlements is in excess of the balance due for additions and betterments.

Explaining somewhat in detail, March 1, 1920, at the close of Federal control, the addition and betterment account of the Railroad Administration against the carriers aggregated \$1,144,681,582.39. The expenditure for equipment aggregated \$381,649,957.12. As this expenditure was taken care of in the equipment trust certificates, this amount should be deducted from the aggregate expenditure, and leaves a balance of additions and betterments to be otherwise disposed of aggregating \$763,031,625.27.

Prior to any final settlements, and largely in the earlier part of Federal control, there was special assistance given some of the carriers in the way of funding (Baltimore & Ohio, \$9,000,000; Boston & Maine, \$8,000,000; Erie, \$3,500,000; New York, New Haven & Hartford, \$17,000,000) aggregating \$37,500,000, which deducted from the \$763,031,625.27, leaves a balance of additions and betterments of \$725,506,625.27.

Up to October 1, 1921, final settlements were made of claims aggregating \$387,017,099.12, and in these settlements \$170,756,035.16 of additions and betterments were disposed of, \$137,313,035.16 being collected from the carriers—that is, this amount was charged to them and deducted in the final settlements—otherwise the cash payment to the carriers would have been increased by the amount of additions and betterments so collected, and \$33,443,000 was funded as a part of and in connection with the final settlements.

These two items make an aggregate of \$170,756,035.16, which, deducted from the \$725,506,625.27, above stated, left a balance, as of October 1, 1921, of \$554,850,590.11 of additions and betterments to be disposed of in final settlement.

It is estimated by the Railroad Administration that, as of October 1, 1921, there is due the carriers from the Government on final accounting, and this includes compensation, money taken over, maintenance of way and structures, maintenance of equipment, depreciation, and all other items, exclusive of additions and betterments, \$834,702,183.66. Deducting the balance of additions and betterments undisposed of, as of October 1, 1921, \$554,850,590.11, leaves a balance of cash required for the completion of final settlements, based upon collecting from the several carriers the amount charged against them on account of additions and betterments, \$279,851,593.55.

In all estimates of amounts necessary to conclude final settlements, such estimates have always been based upon the assumption that the additions and betterments, which, exclusive of the equipment trust certificates, aggregated \$763,031,625.27, would be collected from the carriers in final settlement.

I am always apprehensive that some confusion may exist because of differences in aggregate amounts given at different times. For instance, comparing the statement I made before the Interstate Commerce Committee of the Senate, the statement herewith submitted, as of October 1, 1921, and some subsequent statements that I have made, as of November 1, it must always be borne in mind that in the progress of liquidation these balances are constantly changing from month to month by reason of the fact that final adjustments are being completed almost daily.

In this particular statement I am calling attention to a specific item of \$37,500,000 which represents funding completed by the Railroad Administration before my connection with it. In some statements heretofore made we have included this \$37,500,000 in the aggregate of funding made. This does not change the balances in any particular, but, as a matter of fact, the \$37,500,000 was funded prior to final settlements, and to be exactly accurate should receive the special consideration which I have given it.

**TOTAL AMOUNT NECESSARY TO COMPLETE FINAL SETTLEMENTS BETWEEN THE RAILROAD ADMINISTRATION AND THE CARRIERS, AND HEREIN THE EFFECT OF CLAIMS FOR ADDITIONS AND BETTERMENTS, PROPERLY CHARGEABLE TO CAPITAL ACCOUNT, IN SUCH FINAL SETTLEMENTS**

Total amount expended by the Railroad Administration for additions and betterments during 26 months of Federal control.....	\$1,144,681,582.39
Of this amount there was expended for equipment (100,000 freight cars and 2,000 locomotives), which expenditures are represented by 10-year equipment trust certificates, and are therefore eliminated from the account.....	381,649,957.12
Leaving balance of account for additions and betterments, less equipment trust certificates.....	763,031,625.27
Under special adjustments made by the Railroad Administration prior to final settlements, funding for individual roads (Baltimore & Ohio, \$9,000,000; Boston & Maine, \$8,000,000; Erie, \$3,500,000; New York, New Haven & Hartford, \$17,000,000) aggregated a total of.....	37,500,000.00
This left a balance of additions and betterments to be adjusted in final settlement of.....	\$725,506,625.27
Up to October 1, 1921, final settlements were made of claims presented by the carriers in the aggregate sum of \$387,017,099.12. In these settlements \$137,313,035.16 of additions and betterments were charged to the carriers, and \$33,443,000 of additions and betterments were funded as a part of and in connection with such final settlements. These settlements have, therefore, reduced the addition and betterment claims by the sum of.....	170,756,035.16
Leaving a balance of additions and betterments to be adjusted in future final settlements of.....	\$554,850,590.11

It is estimated by the Railroad Administration that, as of October 1, 1921, there is due the carriers from the Government, on accounts growing out of Federal control, and this includes compensation, money taken over, maintenance of way and structures, maintenance of equipment, materials, and supplies, depreciation, and all other accounts, exclusive of additions and betterments... 834,702,183.66  
Deducting the balance of additions and betterments undisposed of October 1, 1921..... 554,850,590.11

Leaves the balance of cash required for final settlements, based upon the estimate of the Railroad Administration as above set forth, and further based upon collecting the balance due on additions and betterments as shown above \$279,851,593.55

**EXPLANATION.**

In all estimates of the amount necessary to conclude final settlements, same have been based upon the assumption that the additions and betterments would be collected from the carriers on final settlement, as the amount of such additions and betterments was charged in the accounts against the carriers at the time of the completion of same.

In comparing these estimates with estimates heretofore given, it must always be borne in mind that, because of adjustments that are being constantly made, balances are continually changing. The foregoing estimate is as of October 1, 1921.

## Railroad Ticket Protective Bureau Still Fighting Scalpers

THE RAILROAD TICKET PROTECTIVE BUREAU, which was first established in February, 1903, and was disbanded during the period of federal control, was again organized in November, 1920, and since that time has been particularly active. Its object, as stated in its articles of organization, is the "detection and prosecution of forgers, counterfeiters, and unlawful manipulators of railroad tickets." During federal control the duties of the bureau were taken over by the Property Protection department of the U. S. R. A.

Since its reorganization, the bureau has made an extended investigation of railroad ticket scalping throughout the country, as a result of which it has found that scalping has increased to a much greater extent than was in evidence prior to 1918. This is especially the case at suburban points where low monthly rates are made on 60 or 25-ride tickets. The Long Island recently estimated its loss from suburban ticket scalping to exceed \$100,000 per year. The New York Central, on September 1, inaugurated the plan of requiring a photograph of the purchaser pasted on his monthly ticket and, by that means of identification, prevent its re-sale.

Commuters have protested strongly against the inconvenience of this regulation and several attempts were made to have the ruling revoked before it became effective on October 1. The New York Central reports that one of the first effects of the new ruling was a tremendous decrease in the sale of commutation tickets at a small station on the West Shore division. Although this station has only a handful of commuters it always sold at least 40 commutation tickets each month. This was explained by the fact that the commutation rate from this station is only 32 cents, whereas the regular round trip fare is \$2.70.

Scalping of other than suburban tickets has also been uncovered in the process of the Ticket Protective Bureau's investigation. It was found that the low-priced week-end and Sunday excursion rates brought about the resumption of curbstone ticket scalping in the vicinity of the depots. Sunday excursionists are openly importuned to buy and sell the return coupon of a ticket. This is easily accomplished by the scalpers as excursion tickets are usually issued in non-signature form and are not protected by former state and federal court injunctions. Of the 48 states in the Union, only 16 have attempted to enact anti-scalping legislation and in some of these states the bills have been carelessly drawn, while in others riders and amendments have been added to the bills, practically destroying their effect. To remedy this situation, C. A. Fox, chairman of the Railway Ticket Protective Bureau, and an advisory board are now working on several plans which are designed to curb, if not entirely eliminate, this drain on passenger earnings.



*Farming Along the Canadian National*

## Railway Development Association Meets in Chicago

Agriculturists and Industrial Agents Discuss Transportation  
Business from Interesting Angles

THE American Railway Development Association, organized in 1906 and consisting of about 200 land commissioners; agricultural, real estate, tax and industrial agents; immigration inspectors; horticulturists and colonization agents of railroads in the United States and Canada, held a semi-annual meeting at the Hotel Sherman, Chicago, on November 10 and 11. The convention was opened by the president, G. E. Bates (D. & H.), and was conducted in two separate sections, one agricultural and the other industrial, except when giving attention to matters of mutual interest. One such occasion was the tribute paid to the dead soldiery of the world war when at 11 a. m. on November 11, the assembly discontinued its deliberation for a moment while the members stood silently facing east.

A variety of topics received consideration during the convention. Addresses were delivered by C. S. Ucker, vice-president, Southern Settlement and Development Organization, and Samuel O. Dunn, editor of the *Railway Age*, and many excellent papers were presented on the several phases of the agricultural, industrial and marketing problem.

### Publicity Came First on the Program

That the association entertains a very favorable opinion of the value of publicity work in railway development and a desire to familiarize itself with the various ramifications of the problem was indicated by the large amount of time allotted to the consideration of this subject. S. R. Guard, director of publicity, American Farm Bureau Federation, speaking first on this subject, dwelt somewhat on what he considered the underlying principles of successful publicity methods and concluded his talk with a description of the methods of the American Farm Bureau Federation. From this description it appeared that while the Farm Bureau Federation has no official publication, it accomplishes a great deal through the medium of a weekly news letter which is made available to newspapers and is distributed to the officers of the state and county agricultural offices who adapt the information to the local situation.

Z. G. Hopkins (M. K. & T.) followed Mr. Guard with a spirited talk on the subject of railway publicity methods.

Since the railway industry is of such importance to the public that the newspapers will say things about it whether the carriers themselves like it or not, Mr. Hopkins said, it is highly important for the roads to see that the public is not misinformed about what the railway situation is and what the roads are trying to do. To do this, in Mr. Hopkins' opinion, is the primary object of railway publicity at the present time. He pointed out that while the dissemination of absolutely correct information by a definite organ of publicity and the close surveillance given to newspapers by publicity men can accomplish considerable along this line, it is desirable that railway men should not lose sight of their own opportunity to do effective work when in personal contact with the public and to this end he urged the members of the association never to fail to throw their weight on the railroad side of the argument during their extensive travels.

Responding to a request from the chair, J. F. Jarrell (A. T. & S. F.) strongly indorsed the remarks of Mr. Hopkins and along with C. S. Hatfield (secretary, St. Louis Convention, Publicity and Trade Bureau), placed special emphasis on the merit in the idea of localized publicity as introduced by Mr. Guard. Mr. Jarrell in his remarks on the latter point referred particularly to the value of cultivating the good will of newspaper men and Mr. Hatfield illustrated the point by reference to the Neosho plan of community advertising, described elsewhere in this article.

### Samuel O. Dunn Addresses the Convention

Appearing before the joint session of the association on Thursday and addressing himself to the railway and general economic situation, Mr. Dunn brought home to the association forcibly a pressing phase of development work. The most important problem confronting the railroads at the present time, he pointed out, does not lie so much in getting more business as in getting ready to handle it, for as he stated, the present predicament of the farmers, though a serious one, is the result of a temporary under-consumption throughout the world which condition is even now righting itself, while, on the other hand, the condition of the railroads is one of under-development. The difficult thing about this latter

phase of the problem Mr. Dunn said, is that the railroads are powerless to solve it alone; since the public fixes the freight rates on the one hand and the pay of the labor on the other, as a result of which it necessarily follows that if the problem is going to be solved correctly the public must understand what the situation is. As a class of railway men who are in constant touch with the public, it devolves upon the members of the association to overcome the erroneous ideas entertained by the public regarding the railway business and meet false propaganda; and, by co-operating with the public in problems of mutual interest, to acquire its confidence and good will.

#### Railroads Have an Immediate Interest in Colonizing

When Mr. Dunn had concluded his address the association undertook the consideration of the immigration and colonization question. This session was conducted under the direction of H. W. Byerly (N. P.) and involved the presentation and discussion of three papers, the first of which was by B. G. Packer (commissioner of immigration of Wisconsin) on the Wisconsin plan of colonization. In his talk Mr. Packer described fully the origin and operation of Wisconsin's effective organization for clearing and populating its hitherto sparsely settled and cut over lands. The success of the Wisconsin plan, Mr. Packer pointed out, is based on the personal interest which is taken in each settler before and after his connection with the land, this interest manifesting itself through liberal financial support given to the settler while improving his land, protection extended against unscrupulous real estate men and the educational service rendered.

Among other things of which the settler is apprised, Mr. Packer said, is the fact that the railroads are themselves rendering material help to the farmers by colonizing undeveloped lands, equipping trains with products for exhibition in other states, working with the agricultural department in holding meetings among settlers, furnishing speakers for farmers' institutes, advertising agricultural meetings, helping farmers to secure better markets for their products, co-operating with the state department in operating land clearing specials, etc. In discussing this paper, D. W. Foster (Canadian National) deplored the fact that whereas 73 per cent of the population was on the land a few years ago only 27 per cent is so situated at the present time and stated that there are thousands of farmers in cities who ought to be back on the land.

The second paper presented during this session of the association was one by J. M. Jones (S. A. L.) on the subject of immigration methods in the west and the northwest. After dwelling upon the importance to any railroad of a well-settled and thriving country tributary to its lines and calling attention to the vast areas of sparsely inhabited lands which the Seaboard Air Line traverses, Mr. Jones told of a trip which he recently made through the west and northwest in search of methods and practices applicable to the Seaboard Air Line's problem. Visiting in Michigan, Wisconsin, Minnesota, Montana, Washington, Oregon, California, Utah, Colorado, Kansas and Oklahoma, Mr. Jones observed a wide variety of colonization programs in various stages of completion and of more or less merit. Prominent among the projects visited and studied were those near Marquette, Mich., the projects of the Chippewa Valley Colonization Company, the Wisconsin Colonization Company and the Tomahawk Land Company in Wisconsin, the Huntley Irrigation Project in Montana, the Yakima and Wenatchee projects in Washington, the Hood River project in Oregon, the Dwinell and Forkner projects in California and the Red Lands project in Colorado. As a result of his study Mr. Jones concluded that settlement work to be successful must afford (1) a legitimate profit to the man who is selling the lands, (2) an opportunity for the settler to work, to gain

a living while working, to establish a happy home and to pay for his property within a reasonable time, and (3) the means to improve social conditions and advance the interests of citizenship.

"Land selling against land settling" was the subject of the final paper presented on the question of colonization. In this paper H. M. Madison (S. A. & A. P.), portrayed the evils of colonization which goes no deeper than the selling of the land. "With some notable exceptions and a few partial successes," Mr. Madison said, "land settling methods have been largely an orgy of reckless advertising and expenses," with permanent profit to nobody. "The payments made by purchasers have seldom been used," he said, "to improve land or develop production, neither have much of them gone to land owners or served to accumulate assets for land selling concerns." It is not the amount of land sold but the percentage of farms in cultivation, Mr. Madison explained, that determines the success or failure of railroads serving agricultural sections, and it is a significant fact that a railroad serving an agricultural country is seldom able to meet its operating costs and fixed charges alone until one-third of the territory it serves is under cultivation. If this were more generally known and understood by railway investors and managements, Mr. Madison said, less reliance would be placed in mere land selling methods and more attention given to the cultivation and proper financing; for, as Mr. Madison further pointed out, failures in land selling not only result in immediate losses to railroads but give the land an unfavorable reputation which is difficult to overcome. The policy of a railroad, therefore, in Mr. Madison's opinion, should be one of land settlement as against land selling and this policy, to be effective, should rest upon the following rules:

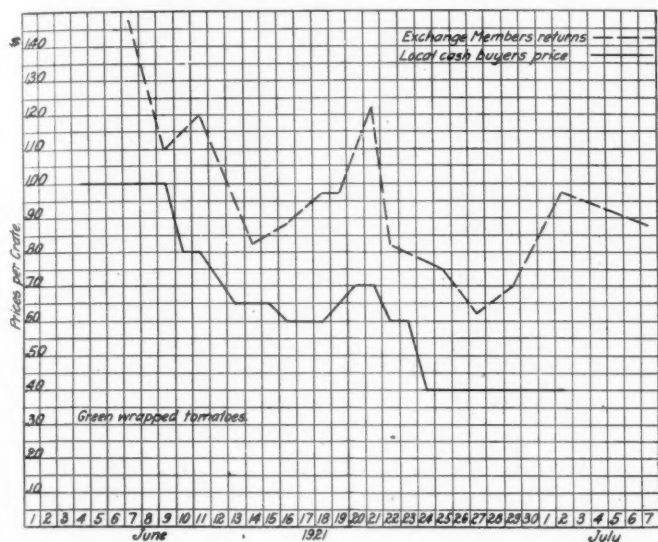
1. Refuse to list, advertise, sell or help sell any improved farm—leaving such work to real estate men.
2. Refuse to help sell or encourage any farmer to buy raw or unimproved land.
3. Refuse to lend any assistance or to encourage any concern to simply sell raw or unimproved lands.
4. Encourage local organizations to improve land.
5. Offer assistance in finding farmers to purchase newly improved farm lands.
6. Help farmers get money to improve larger percentages of their farms.
7. Point out the desirability of better plans in subdividing and improved tracts of land.
8. Point out the adaptability of soils to particular kinds of crops, and otherwise.
9. Encourage better farming methods.

In discussing this paper C. L. Seagraves (A. T. & S. F.) emphasized the importance of getting co-operation from the state in the development work and of interesting the various chambers of commerce in disseminating full information about the farms as well as the products. He further pointed out that colonization plans to be successful should provide a means by which farmers might obtain comforts in their homes comparable to those in the cities. The fact that surveys show that people who left the smaller towns and the farms four or five years ago and moved into the larger cities now want to return, Mr. Seagraves contended, made it apparent that, if reasonably comfortable homes could be provided on the farms, little difficulty would arise in populating unsettled regions.

As an additional item on this subject F. McCabe (C., St. P., M. & O.) briefly discussed the situation along the Omaha Line in northern Wisconsin. In order to populate this section, he pointed out, the road has found it advisable to make a thorough study of every element entering into the development work, including the banks and the real estate men. A clear-cut distinction is made between land sellers and land settlers, he pointed out, and deserving agencies are given free transportation in connection with their promotion work.

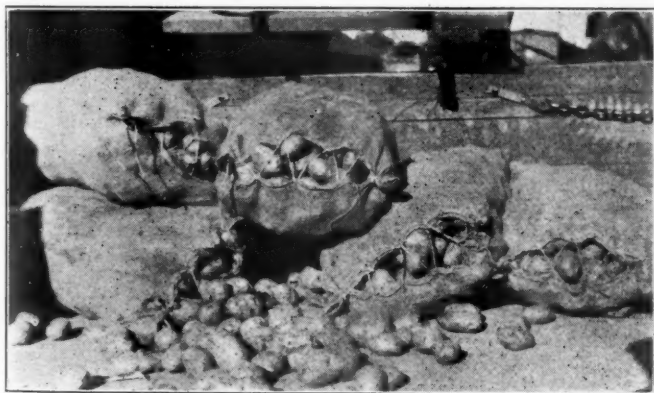
### Helping the Farmer Improve His Business

The extent to which the association considers it profitable for the railroads to go into development work, was brought out Friday morning when the agricultural section, under the direction of J. M. Jones (S. A. L.), devoted its time to the consideration of such subjects as the raising of live stock and potato loading. On the live stock subject E. J. Leenhauts (N. Y. C.), after dwelling on the decided economic advan-



### How the Railroads Helped the Farmer by Encouraging the Organization of Commodity Marketing Associations

tages to a community of the well bred over the scrub stock, described how the New York Central had co-operated with various agricultural organizations, including the Michigan Agricultural College, in introducing pure bred livestock in northeastern Michigan. In the particular campaign in question it developed that a special train of 9 cars, carrying stock and various educational exhibits, and accompanied by the agricultural agents of the road as well as representatives of



Poorly Sewed Sacks Cause Large Annual Losses

other organizations, made an 18-day trip throughout this section coming into contact with 15,000 people.

During the discussion of this paper it developed that similar campaigns had been conducted by other roads. H. G. Schweiter (I. C.) told how the Illinois Central has gone to the extent of including an educational motion picture in its itinerary, and T. S. Acheson (C. P. R.) said that dairying is made quite as important a subject as live stock on such trains sent out by the Canadian Pacific.

A particularly interesting presentation was made by E. G. Reed (C. & S.) on the subject of potato loading, Mr. Reed

telling how, in order to reduce the annual losses which both farmers and railroads experienced from improper potato loading, a campaign was conducted over the Chicago, Burlington & Quincy and the Colorado & Southern lines in Wyoming, Colorado and Nebraska, in co-operation with agricultural agents and colleges to teach the farmers, station agents and any other interested parties, the right and the wrong ways of loading this produce.

In discussing Mr. Reed's work F. Benz (N. P.) emphasized the value of the correct sorting and loading of potatoes in establishing a reputation with buyers, and made a special point also of the losses which a railroad can avoid either from injury in shipment or practices of unscrupulous buyers, by inspecting carefully the potatoes which are loaded in these cars. It is highly essential, Mr. Benz said, that the railroad must not only know how to load cars but what to load. E. G. Wade (I. C.) called attention to the fact that this statement applies even more directly to the loading and handling of sweet potatoes, neglect in culling out diseased and otherwise defective specimens invariably giving rise to immediate or ultimate losses.

### Discussion of the Marketing Problem

Turning its attention finally to the marketing phase of railway development work, the agricultural section of the association with L. D. Fuller (Erie) in the chair, concluded its session with the consideration of three subjects,



The New York Central's Live Stock Special Aroused the Communities

the first of which was the produce market of New York City. This included a motion picture portrayal of the various operations of marketing farm products in that city from the time the freight cars were ferried across the river, or sold from the farmers' carts in the market-place, to their final disposition. This picture was presented by H. B. Rogers (Erie).

Following this picture, V. B. Farrar (St. L. S. W.) presented a paper on the organization of commodity marketing associations. In this paper Mr. Farrar referred to associations of farmers in certain sections of the country for the purpose of marketing their products as distinguished from organizations for buying, as the most important agricultural development which has grown out of the depression of the last two years. He described the nature of these organizations and enumerated their apparent advantages. Under this plan of organization, Mr. Farrar showed, producers of certain commodity combine together on a purely business basis whereby they are able to eliminate competition between various communities, to protect themselves more effectually against calamity in shipping and marketing and stabilize their business. Along the Cotton Belt Route the railroads have been instrumental in establishing a number of flourishing organizations of this kind, one of which is the Texas Tomato Growers Association.

The third and final presentation made before the Agri-

cultural Section was a paper on the state inspection of perishables prepared by W. C. Andreas (State Bureau of Markets, Nebraska). In the absence of Mr. Andreas this paper was read by J. B. Lamson (C. B. & Q.). While confining itself to the potato situation in Nebraska and in this respect consisting more or less of a reiteration of what was said on potatoes during the discussion on potato loadings, this paper also brought out the advantages of state inspection of such produce. In Nebraska, Mr. Andreas pointed out, state inspection was inaugurated in 1919, when it was made compulsory for the department of agriculture to inspect and grade each carload lot of potatoes originating in the state. The results of this inspection has been very satisfactory, the Nebraska potatoes now receiving due consideration in terminal markets where during the war period the food administration had difficulty in protecting the Nebraska potato from discrimination on the markets.

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Photo from Kadel & Herbert

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1. *The Six Per Cent Clause.*—This provision has been productive of so much litigation because of its having been construed to give complete power over intrastate rates, and has aroused so much prejudice against the railroads that it has worked to their detriment rather than to their benefit. It is the belief of the League that if the Interstate Commerce Commission is to succeed as an administrative tribunal it must be left unfettered by hidebound rules in determining the lawfulness of rates. The committee is also opposed to the socialistic principle of the recapture of excess earnings, whereby the earnings of one carrier may be taken from it and applied directly to the betterment of others. Such a precedent in legislation is most dangerous and may be followed by legislation which will be disastrous to other lines of business. It is therefore recommended that Section 15-a be repealed.

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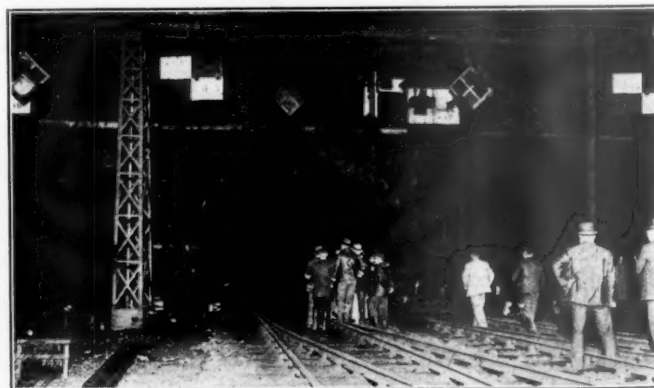


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of such new lines or railroads, independently owned, except that where new lines or new extensions are to be located wholly within one state and have no financial connection with any railroads located in other states.

### Report of Standing Legislative Committee

The report of the standing legislative committee which was adopted opposed the bills requiring mileage books at reduced rates, providing for the creation and organization of a national railway corporation, seeking the retention of emergency powers of the commission, limiting salaries of railroad officers, establishing standards of work and duty for common carriers, proposing the abolishment of "Jim-Crow-cars," seeking to prescribe rates, fares and charges of railroads in the United States. It recommended the endorsement of the bill for protection of trade and commerce against unlawful restraints and monopolies insofar as affects transportation, and of the bill requiring the prompt payment and adjustment of claims, say within 60 days.

### Car Demurrage and Storage Report

After considerable discussion of the projected charge of a \$3 flat demurrage rate, which this committee was instructed to secure at the Cleveland meeting of the league, which rate was to apply both during periods of car surplus and car shortage, the question was tabled. W. H. Day, traffic manager, Chamber of Commerce, Lynn, Mass., chairman of the committee, stated that although the recommendation had been adopted by the Cleveland meeting by a vote of 145 to 90, a referendum taken had resulted in 360 votes against and only 152 in favor of the flat charge.

The recommendations regarding changes in demurrage rule 3, section B, paragraph 2, and section 6, paragraph 1, were adopted as follows:

"Several of our members have long felt that when forwarding directions on outbound cars were mailed by shipper to billing agency of carrier, cars should be considered as released at 7 a. m. date forwarding instructions are received by carrier, provided postal date shows same was deposited in the mail prior to the date received. To cover this situation the following note is suggested.

"Note.—Except as otherwise provided in rule 6, section C, paragraph 1, this will also apply to forwarding directions on outbound cars when mailed by consignor to the agent of this railroad at point of shipment."

"Demurrage rule 3, section C, paragraph 1. There seems to be a lack of uniformity in computing free time on cars placed on public delivery tracks which the consignees begin to unload sometime between midnight and 7 a. m. and before notice of arrival has been sent or given. Some carriers compute the time on such cars from the first 7 a. m. following removal of a part of the contents of a car, although the removal has occurred on the same calendar day. This practice is based on the theory that a demurrage day runs from one 7 a. m. to the next 7 a. m., so that while the removal of the contents of the car may have occurred say at 5 a. m., it occurred on the demurrage day immediately preceding the 7 a. m., from which time should be computed, and consequently under demurrage rule 4, section D, which provides that such removal shall be considered as notice of arrival, the first 7 a. m. after removal constitutes the first 7 a. m. after the demurrage day on which the notice was consummated by consignee's beginning to unload the car.

"Other carriers compute the free time from the second 7 a. m. after the consignee begins to remove the contents, on the theory that rule 3, section C, paragraph 1, does not specifically state that the day on which notice of arrival is sent or given means a demurrage day running from 7 a. m. to 7 a. m., and therefore means a calendar day. Consequently, the first 7 a. m. after the day on which the consignee begins unloading the car would be 7 a. m. of the next calendar day. In order to overcome this difficulty and to assure uniformity, the American Railway Association recommends that the following note be added to rule 3, section C, paragraph 1:

"Note.—On cars subject to rule 4, section D, time will be computed from the first 7 a. m. following removal by consignee of any part of the contents of the car."

The recommendation of the committee to secure uniformity in the application of demurrage charges on cars placed on public delivery tracks, opposite consignees' oil tanks, coal bins, elevators or warehouses, did not meet the approval of

the meeting. Although the wording of the committee's note had been approved by the American Railway Association's demurrage committee, the following change suggested by J. L. Roberts was substituted:

When any railroad owned track or portion thereof, is leased or assigned to one or more consignees or consignors, the track or portion of track so leased or assigned will be treated as a "private track" only when used for the handling the business of consignees or consignors to whom track or portion of track is leased or assigned; but the track or portion of track so leased or assigned will be treated as a "public delivery track" when used for the handling of business of consignees or consignors other than those to whom the track or portion of track is leased or assigned.

### Diversion and Reconsignment

Four changes were proposed by H. D. Rhodehouse, traffic manager, Chamber of Commerce, Youngstown, Ohio, chairman of this committee and the meeting ratified the report and changes with wording as follows:

A joint conference of diversion and reconsignment committees representing the National Industrial Traffic League and the carriers in Official, Southern and Western Classification territories was held in Chicago, July 12, 1921. Discussion was had with respect to changes in the present rules, regulations and charges governing diversion and reconsignment of general commodities. The committees agreed on certain changes, with the understanding that such changes must be approved by the League and the railroad executives before they are published in carriers' tariff. The proposed changes are as follows:

Rule 2. Freight rate applicable.—These rules and charges will apply whether shipments are handled at local rates, joint rates or combination of intermediate rates. The through rate to be applied under these rules is the rate from point of origin via the diversion, reconsigning or reforwarding point to final destination in effect on date of shipment from point of origin. If the rate from original point of shipment to final destination is not applicable via the point at which the car is diverted, reconsigning or reforwarded, in connection with these lines, the tariff rate in effect to and from the diversion, reconsigning or forwarding point will apply, plus diversion or reconsignment charges, except that if a lower combination of rates is lawfully applicable over the route of movement such lower combination of rates, plus diversion or reconsigning charges, will apply.

Rule 4 (b) switching charges additional.—If diversion or reconsignment is made after arrival of car at billed destination and the car has been delivered to a connecting road, the switching charges of connecting road will be in addition to any other charges named herein, except that where combination of local rates is applied to and from the diversion or reconsignment point, switching charges will be added or absorbed to the same extent as on traffic moving locally to or from the diversion or reconsignment point.

Rule 8 (a) stopping in transit.—If a car is stopped for orders for the purpose of delivery or diversion or reconsignment or reforwarding prior to the arrival at original billed destination, or if such destination is served by a terminal yard, then prior to arrival at such terminal yard, on request of consignor, consignee or owner, a charge of \$..... per car will be made for such service and the point where the car is stopped will be considered the destination of the freight, and the party upon whose order car is held will be notified at the postoffice address designated by him. If the car is subsequently forwarded from point at which held, the provisions of rules 9, 10, 11 or 12, as the case may be, will also be applied. The service of stopping as provided in this rule will not prevent one change of destination under the provisions of rule 5.

Rule 11 (b) and (c). Diversion or reconsignment to points within switching limits before placement.—(b) At a charge of (\$2.50-\$3.00) per car, if, after arrival of car at destination, or if destination is served by a terminal yard, then after arrival at such terminal yard, such orders are received before the expiration of twenty-four (24) hours after the first 7 a. m. after the day on which notice of arrival is sent or given to the consignee or party entitled to receive same. (See note below.)

(c) At a charge of (\$6.50-\$7.00) per car, if such orders are received subsequent to 24 hours after arrival of the car at destination, or if the destination is served by a terminal yard, then subsequent to 24 hours after arrival at such terminal yard. (See note below.)

(c) At a charge of (\$6.50-\$7.00) per car, if after arrival of car at destination, or if destination is served by a terminal yard, then after arrival at such terminal yard, such orders are received subsequent to the expiration of 24 hours after the first 7 a. m. after the day on which notice of arrival is sent or given to the consignee or party entitled to receive same. (See note below.)

Note.—In computing time, Sundays and legal holidays (na-

tional, state and municipal) will be excluded. When a legal holiday falls on Sunday the following Monday will be excluded.

Proposals to change a number of other diversion and reassignment rules were discussed, but no agreement could be reached. Those changes will be considered at future conferences with carrier's committees.

The changes made in the uniform code of storage rules and charges as agreed upon with the American Railway Association and presented by the committee in their new form were adopted.

At the opening of the afternoon session Mr. Beek told of the League's efforts to combat the position taken by Mr. Finerty, counsel for the director general, that all reparation, both because of discrimination and because of unlawfulness ought to be made on the basis of rates in effect subsequent to the operation of General Order 28, even though the shipments moved under federal control prior to the effective date of that order. Mr. Beek said that arguments were presented before the Commission early in October but that the Commission had done nothing about it and that the League counsel was now watching the matter. The executive committee's wage and rate resolution of September 23 was ratified.

The report of the classification committee on the proposed revision of rule 7 of Consolidated Classification was sent back to the committee for a minority report. In discussing the committee's report on uniformity of classification, President Chandler said that the matter had been under advisement by the executive committee and that it had been decided to ask the meeting to go on record as being opposed to further revision of the classification if made for uniformity only. He stated that an investigation would show that the advances have been made where they count most and that so far as uniformity was concerned, he thought it was just as easy to add second class to the river and third beyond, as it was to add second class to second class.

#### Bill of Lading Committee Report

F. T. Bentley, traffic manager, Illinois Steel Company, Chicago, chairman of the committee, read the following report which was adopted:

Bill S2530, amending Pomerene bills of lading law.—As this bill is practically what was recommended to the Cleveland convention by the Bill of Lading committee, your Bill of Lading committee endorses it to the executive committee and recommends that appearance before the Senate and House committees by the League be made to further its passage.

Changes proposed in uniform bill of lading based on the Supreme Court decision in Mark Owen Company vs. Michigan Central.—In the summer the eastern section of the uniform bill of lading committee requested a conference with our committee for the purpose of considering the effect on the bill of lading of the Mark Owen vs. Michigan Central decision which definitely defined the liabilities of the carrier for delivery of carloads from public team tracks. Our committee could not meet the views of the railroad committee on this, and we agreed and reported to the executive committee at its recent meeting, that no action should be taken to change the present bill.

#### Claim Prevention

The report of the special committee on claim prevention was adopted, following which the meeting was addressed in turn by Colonel B. W. Dunn, manager of the Bureau of Explosives, Fred E. Winburn, of the Freight Claim division of the American Railway Association, and W. H. Canavan of the Chicago post office, all of whom spoke on the perfect package campaign. The work of this committee is still in the formative period and it was not thought sufficient to warrant making any definite proposals.

A supplementary report of the claim prevention committee which was adopted follows:

The investigations of your committee have developed an apparent lack of authority that can be invoked in the direction of securing the active and hearty co-operation of railroad officers and local agents in this matter of claim prevention. Industry cannot and should not bear all the burden of effort in these conservation matters.

There seems to be a lamentable lack of what may be termed "a point of contact" within railroad circles—that is to say, there is an apparent lack of unity of purpose as between the traffic and operating units of the carriers, and it is the belief of your committee that proper, affirmative and positive influence in this regard can emanate only from the source of the highest railroad authority.

Your committee, therefore, recommends that the executive committee of this league bring such influence to bear on transportation executives as will create "points of contact" in transportation circles through which will be exerted a quality of authority to carry to a successful conclusion the co-operative principles which your committee believes essential to the conduct of this work.

#### Other Reports

The report of the freight claims committee as presented by G. A. Blair, general traffic manager, Wilson & Co., Chicago, chairman, was adopted. A recommendation by G. T. Haynes of Sioux City, asking that further consideration of the McCaull-Dinsmore decision be tabled was also adopted. The weighing committee's report was accepted unchanged.

The meeting after hearing the report of the committee appointed to deal with the railroad traffic officers went on record with the following resolution:

It is the sense of this meeting that proposed reductions in strictly local rates having no influence on other rates should in the interests of expediency be handled by individual roads and not docketed.

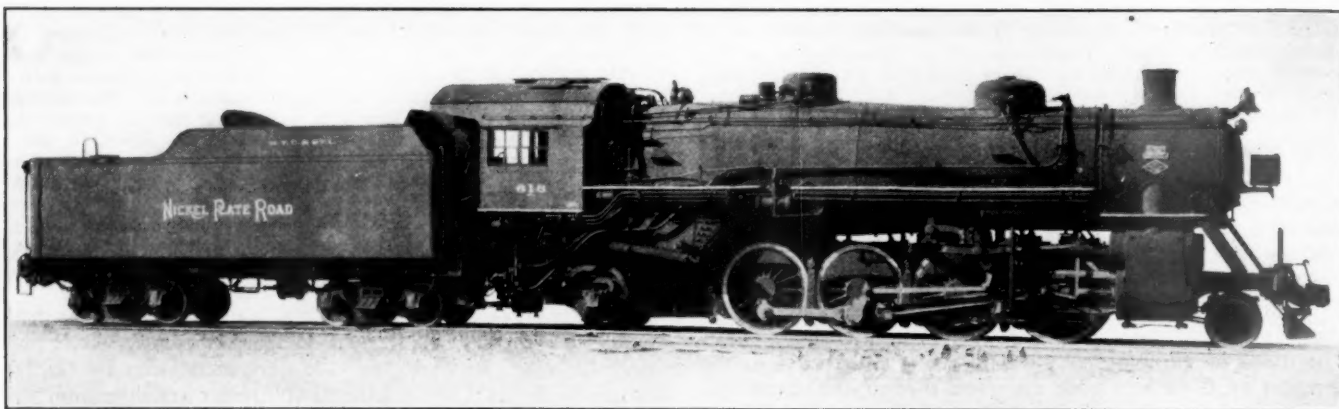
The meeting also went on record by resolution as being in favor of the continued operation of the Mississippi—Warrior River barge line by the government until such time as it can be disposed of to private interests to fair advantage.

#### Election of Officers

The following officers were elected for the ensuing year: president, W. H. Chandler, manager transportation bureau, Boston Chamber of Commerce; vice-president, Charles Rippin, traffic commissioner, Merchants' Exchange, St. Louis, Mo.; treasurer, E. C. Wilmore, traffic manager, Sefton Manufacturing Corporation, Chicago; executive secretary, J. H. Beek, Chicago; regional vice-presidents: F. H. Baer, Cleveland, Ohio; M. M. Caskie, Montgomery, Ala.; C. E. Childe, Omaha, Neb.; W. H. Day, Jr., Lynn, Mass.; G. S. Maxwell, Dallas, Tex.; Seth Mann, San Francisco, Cal.; R. J. Menzies, New York; board of directors: H. C. Barlow, Chicago; J. M. Belleville, Pittsburgh, Pa.; W. S. Creighton, Charlotte, N. C.; J. S. Davant, Memphis, Tenn.; C. B. Baldwin, Boston, Mass.; F. T. Bentley, Chicago; C. O. Bergan, Spokane, Wash.; C. S. Bather, Rockford, Ill.; H. E. Driscoll, Oklahoma City, Okla.; R. N. Field, Peoria, Ill.; R. L. French, Bridgeport, Conn.; R. S. French, Washington, D. C.; Carl Glessow, New Orleans, La.; F. P. Gregson, Los Angeles, Cal.; J. C. Graham, Jackson, Mich.; J. P. Haynes, Sioux City, Ia.; F. S. Keiser, Duluth, Minn.; J. C. Lincoln, New York; L. G. Macomber, Toledo, Ohio; J. D. Mansfield, Seattle, Wash.; C. D. Mowen, Fort Smith, Ark.; Herman Mueller, St. Paul, Minn.; U. S. Pawkett, San Antonio, Tex.; R. W. Poteet, New Britain, Conn.; F. M. Renshaw, Cincinnati, Ohio; J. T. Ryan, High Point, N. C.; M. H. Strothman, Minneapolis, Minn.; J. H. Tedrow, Kansas City, Mo.; T. H. Wallace, Lansing, Mich.; and G. P. Wilson, Philadelphia, Pa.

The executive committee for the new year is: chairman, H. C. Barlow, Chicago; vice-chairman, J. M. Belleville, Pittsburgh, Pa.; F. T. Bentley, Chicago; W. S. Creighton, Charlotte, N. C.; R. M. Field, Peoria, Ill.; J. P. Haynes, Sioux City, Ia.; F. S. Keiser, Duluth, Minn.; J. C. Lincoln, New York; Herman Mueller, St. Paul, Minn.; U. S. Pawkett, San Antonio, Tex.; R. W. Poteet, New Britain, Conn.; C. D. Mowen, Ft. Smith, Ark.; J. S. Davant, Memphis, Tenn.; R. L. French, Bridgeport, Conn.; Carl Glessow, New Orleans, La.

The next annual meeting of the league will be held in New York City, November 15 and 16, 1922. During the last year the membership of the league has increased from 936 to 1,029 members.



*Mikado Locomotive Equipped with Booster*

## 2-8-2 Type Locomotives for the Nickel Plate

Design Based on U.S.R.A. Light Mikado with Improvements in  
Details—Booster Handles 22 Per Cent Additional Tonnage

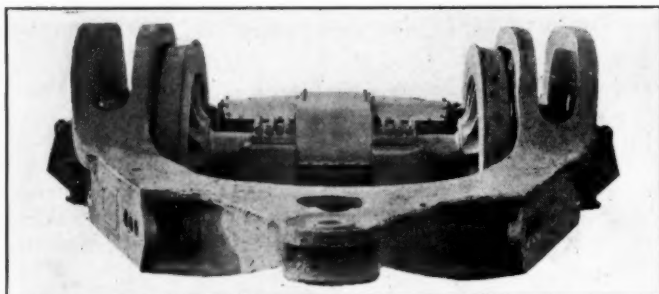
THE NEW YORK, CHICAGO & ST. LOUIS (Nickel Plate) has lately received from the Lima Locomotive Works six Mikado (2-8-2 type) locomotives. The design was based largely upon the U.S.R.A. standard light Mikado, ten of which were allocated to the road, but a number of new and interesting features were added which make the locomotives among the best of this class.

One of the locomotives was equipped with a booster fur-

are not adjustable but are provided with solid round bushings pressed in the same as on the side rods.

Instead of six-feed lubricators with feeds to the cylinders, these locomotives use four-feed lubricators, the cylinder feeds being omitted in accordance with the standard practice on the Nickel Plate which has been found to be entirely satisfactory.

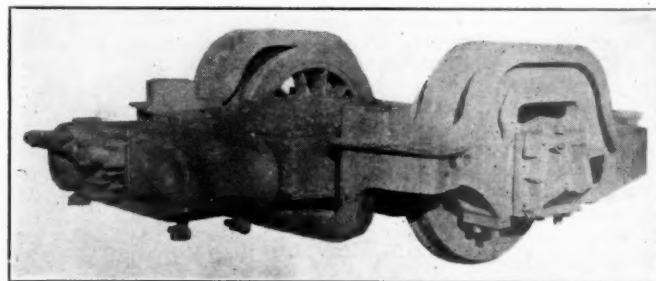
The boiler is of the conical-connection type with combustion chamber and is equipped with type A top header superheater, Security brick arch and butterfly type firedoor. A Duplex stoker is used and particular attention was given to the cab arrangement to locate all necessary piping and fittings for the greatest convenience of the engineer and fireman. The boiler pressure is 200 lb. The firebox is 114½ in. long by 84¼ in. wide, which gives a grate area of 66.7 sq. ft. There are 216, 2¼ in. tubes and 40, 5½ in. flues, 19 ft. long. The heating surface of the firebox, combustion cham-



Front View of Trailing Truck with Booster

nished by the Franklin Railway Supply Company and provision was made on the other engines for the ready application of boosters at some future time. The trailer trucks are of the Commonwealth Steel Company's outside bearing Delta type, equalized with the drivers. The booster and truck are shown in two of the illustrations.

These locomotives have a tractive effort of 54,700 lb. without the booster and 64,200 lb. with the booster, an addition of 17 per cent. The cylinders are 26 in. by 30 in. and the drivers 63 in. outside diameter. The total weight of the locomotive equipped with the booster is 307,000 lb., of which 226,500 lb. are on the drivers, 20,500 lb. on the front truck and 60,000 lb. on the trailing truck. The driving wheel base is 16 ft. 9 in. and the total engine wheel base 36 ft. 1 in. The frames are fitted with a cast steel cradle and Franklin automatic adjustable wedges are used on all drivers. The valve gear is of the Walschaert type and control is by a Ragonnet type B power reverse. Cylinder and steam chest bushings are of Hunt-Spiller metal. The front truck is of the constant resistance type. Okadee automatic cylinder cocks and White single sanders to the front drivers only are among the other specialties. The front end main rod brasses



Side View of Trailing Truck with Booster

ber and arch tubes is 280 sq. ft., the evaporative heating surface of the tubes and flues 3,497 sq. ft. and the superheating surface 882 sq. ft.

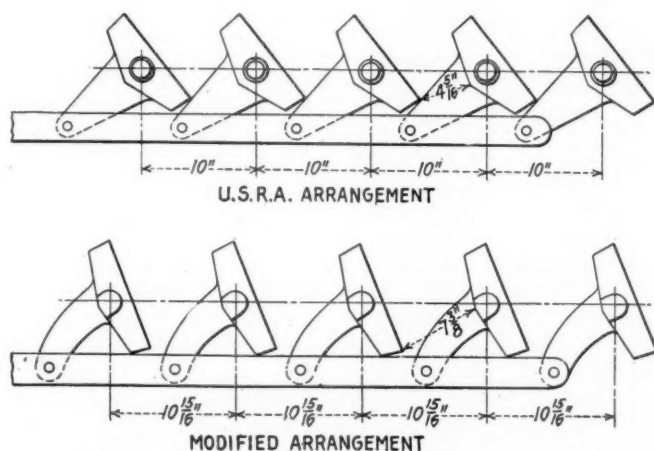
Special features include a cast steel ash pan, Woodard outside connected throttle with lever support designed to provide for expansion of the boiler, Nathan non-lifting injectors, Phillips top boiler check valves and Franklin power grate shaker.

The two center arch tube plugs in the throat sheet are located on the radius and in order to get good threads the holes in the sheet are tapped out 3½ in., steel bushings screwed in and then welded around the edge, the arch tube plugs being screwed into the bushings. This may be con-

sidered a minor detail but attention to such points can save much vexation in the roundhouse.

The grate arrangement is of an entirely different design from that used on the U.S.R.A. standard light Mikados. The U.S.R.A. box grate had a straight horn perpendicular to the grate on the longitudinal center line. With this arrangement when the grates are wide open the maximum distance between the top of one grate and the bottom of the next grate is  $4\frac{5}{16}$  in. In redesigning the grate arrangement, a curved horn was used which threw the center of the grate connection pin about  $3\frac{1}{2}$  in. ahead of the center. When these grates are wide open there is a maximum of  $7\frac{3}{8}$  in. from the top of one grate to the bottom of the next. The difference in design is shown plainly in one of the illustrations.

Drop grates were used on the U.S.R.A. locomotives, but these were omitted on the new Mikados which have 10 rocking grates on each side of the firebox. With the large openings it is possible to dump the fire much more quickly and easily than with the old standard arrangement of drop grates and smaller openings in the rocking grates. The curved horn grate is not original on the Nickel Plate for it is the standard on the New York Central. However, the comparison be-



Grate Arrangement on Old and New Locomotive

tween the two designs is interesting, especially as it is in connection with such points as this that the U.S.R.A. standard designs commonly have been criticized.

As indicative of the value of the booster the record of a run made soon after the locomotive was received is of interest. This run was between Conneaut and Buffalo with a train of 50 loaded cars, 3 empty cars and 2 cabooses, the tonnage being 3,848. The regular tonnage for this class of power without a booster is 3,136. The excess tonnage handled was thus 712, or an increase of 22.7 per cent over the regular rating.

The train left Conneaut at 8:40 a. m. and arrived at Tift street yard, Buffalo, at 4:32 p. m. The time on the division was 7 hr. 52 min. and the actual running time 5 hr. 45 min., an average speed while the train was running of 19.9 miles an hour.

The booster was used eight times, as follows: Leaving Conneaut yard; on Springfield hill; pulling into and out of Girard siding; pulling into Cascade siding; pulling into and out of Pomfret siding; starting at D. A. V. & P. crossing, Dunkirk, and on Delaware hill. The approximate distance over which the booster was operated was three miles.

The maximum steam pressure was maintained over the entire division—even when the booster was operated the steam pressure did not fall and it was not necessary to lower the water level. In ascending Springfield hill the speed slackened to about seven miles an hour. The booster was

then cut in and the speed was accelerated to approximately ten miles an hour before the top of the grade was reached.

It was necessary to stop at the D. A. V. & P. crossing in Dunkirk. After the crossing was cleared the train, although standing on a heavy ascending grade combined with a slight curve, was started with the aid of the booster at the first attempt. This is considered one of the hardest places on the division to start a train, and demonstrated the added drawbar pull obtained from the booster.

## Obsequies for Steam Locomotive Will Not be Staged for Some Time

THE Superpower Survey report was discussed by W. J. Cunningham, professor of transportation, Harvard University, in an article which appeared in the New York Evening Post, November 15. In commenting on the position of the steam locomotive, he said:

"From time to time, as certain railroads have changed from steam to electrical operation for portions of their lines, the passing of the steam locomotive has been confidently predicted by experts who have been impressed with the superiority of electric traction, but the steam locomotive not only appears to be holding its own, but by notable improvements in design and appurtenances seems recently to have taken a new lease of life."

Professor Cunningham described the status of electric operation as follows:

"The typical railroad executive recognizes the advantages of electrical operation. He knows that it will eventually displace steam, at least on lines of heavy traffic and in congested terminals. For his own line under these conditions he would welcome the advent of electricity if a fairy godmother would provide the capital funds and make it possible to earn the additional carrying charges. The problem is not one of engineering. It is essentially one of finance."

His opinion of the value of the report follows:

"If the estimates of the Superpower Survey engineers as to savings in expenses and return on capital investment could be accepted without reservation the financial problem would be easier of solution. Unfortunately, however, this is not the case. The figures are subject to material qualification. There is evidence of an inclination to go out of bounds in making a case in favor of electricity and against steam. The zeal of the electrical engineer, who is firmly convinced as to the general soundness of his conclusions, is quite natural, but the report would carry much greater weight if it were less biased.

"For example, in the item of fuel the electrical engineers have assumed that a steam locomotive requires seven and one-half pounds of fuel for each kilowatt hour of work at the rim of the drivers. Against this they set an estimate of two pounds under electrical operation. From these data it is assumed that electrification will save two-thirds of the fuel bill.

"It is interesting to compare this theoretical saving of two-thirds of the fuel with the actual figures for the Norfolk & Western. In discussing the subject before a joint meeting of the Societies of Electrical and Mechanical Engineers in New York in October, 1920, the chief electrical engineer of that road stated that a comparison of fuel consumption on the electrified divisions with tests made with modernized Mallet type locomotives under similar conditions indicated that the saving in fuel by electrical operation was 29.3 per cent. This is less than one-third. If the Superpower Survey engineers had assumed a saving of one-third instead of two-thirds (the former is closer to the facts) the estimated fuel savings would be cut in two.

"As has already been stated, the problem is essentially one

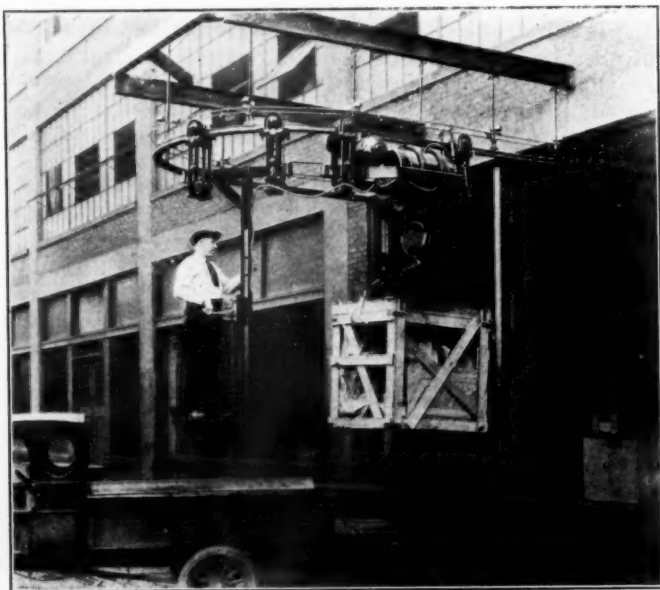
of finance. In the case of a railroad that has an investment in road and equipment of, say, \$100,000 per mile, something more than a questionable return of 14 per cent is needed to induce recommendations for an investment, of, say, \$40,000 more per mile for electrification. On every hand there are needs for additional investments of other kinds which without question will yield more than 14 per cent.

"The Superpower Survey will probably stimulate further discussion of railroad electrification. Notwithstanding the defect which has been mentioned, the report is constructive and should be regarded as a valuable contribution to engineering and economic literature. When the railroads are again on their feet there will probably be further extensions of electrification where the conditions are most favorable.

"It is improbable, however, that electrification on any such scale as is recommended by the report will be attempted. It will come piecemeal and gradually"

### A New Overhead Handling System

IT IS GENERALLY conceded that mechanical methods of handling materials are more economical than manual. Consequently, in the efforts towards reducing costs of operation, the railways are utilizing mechanical devices in increasing numbers. In numerous freight terminals, repair shops, machine shops, etc., where floor space is at a premium, the space overhead is little used. Under such conditions the overhead methods of handling cranes, monorails, tramrails, etc., offer a solution of the problem. The Cleveland Crane



The Tramrail as Applied to Freight Handling

and Engineering Company, Wickliffe, Ohio, has developed a tramrail for use in such localities for which important advantages are claimed.

In the freight terminal the tramrail makes a straight-line movement of outbound l.c.l. freight from a shipper's vehicle into any one of a large number of cars awaiting loading; for inbound freight, a similar movement from any car to some spot in the inbound house and thence, on call, to the consignee's vehicle. The system saves floor space and speeds up delivery. Its use on the railways is not restricted to the handling of freight as it may also be applied in railway shops in the handling of parts to and from the repair job and in the repair shop, machine shop, etc.

Flexibility of the installation of the rail, which can be attached to the purlins of a building or most any support avail-

able through the adaptability of the suspension fittings to varying conditions, is the feature of this tramrail. The entire system is standardized so that a mechanic possessing a common knowledge of machinery can layout, order and install the rail, rail fittings, switches, turntables, carriers, etc. By use of cold bends in the rail any curve down to a 4-ft. radius can be negotiated without a sacrifice of safety.

The sliding switch designed especially for this tramrail is a departure from the usual type of switch employed in overhead systems. Like the other units of the system the switch is standard and possesses distinct advantages. The same switch is installed whether for hand power or electric operation. This permits the hand power system to be electrified at any time. Both the stationary and movable rail in this switch are held in firm contact, eliminating the open space at the point where the rails join. Special attention has been given to safety at this point, with the result that the instant a switch is opened a safety stop drops on the rail, preventing the carrier from passing that point. When the switch is in position, it is automatically locked, thus preventing the carrier and its load from sliding the switch out of alignment. When desired, an additional safety feature, the installation of a trolley wire insulator, makes it impossible for an electrically driven carrier to run at full speed against a safety stop or open switch.

It is often found necessary to install the rail at different levels. This means that the carriers must negotiate a grade. The electrically driven carrier has ample power to operate with its full load up to a grade of 12.5 per cent. This makes the employment of a brake essential and a foot brake is provided on carriers which travel a grade. Where the difference in levels means excessive grades an ordinary freight elevator is installed with the tramrail.

By use of a central control system, one man can operate several carriers. Where an unobstructed view of the system is impossible, the operator is informed as to the location of the carriers he controls by signal lights on a board before him. With this arrangement the dispatcher can switch the carrier to any track or location desired.

Approximately 1,200 types of carriers are available through the combinations of the standard equipment. It should be noted that all working parts are fully enclosed as a protection from fumes, moisture and dirt. The ball bearings and other bearings, of bronze graphite inserted bushings with ample provision for self-lubrication are readily accessible if it becomes necessary to remove them.

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Photo by International

Fighting the Erie Pier Fire at Weehawken, N. J.

## General News Department

### Western Railway Club

The next meeting is to be held on the evening of November 21 at the Great Northern Hotel, Chicago. N. D. Ballantine, superintendent of transportation of the Union Pacific, will read a paper entitled, "Does It Pay to Repair Foreign Freight Cars?"

### Tentative Valuations

The Interstate Commerce Commission has issued tentative valuations in which it states the final value of the used property of various roads as follows: Massillon Belt, 1916, \$19,123; Baltimore & Sparrows Point, 1915, \$429,327; Charleston & Western Carolina, \$10,509,027; Boston Terminal Company, \$19,910,500.

### Alaska Railroad Bill Passed by Senate

The Senate on November 14 passed the bill which had been passed by the House the week before, authorizing an additional appropriation of \$4,000,000 for the completion of the Alaska railroad. This is not a regular appropriation bill, but simply raises the limit on the cost of the railroad from \$52,000,000 to \$56,000,000, so that estimates may be sent to Congress; and actual appropriation made hereafter.

### Engineering Institute of Canada—Annual Meeting

The annual general meeting of the Engineering Institute of Canada will be held at Montreal on Tuesday, January 24, 1922. At this meeting the formal business of the Institute will be conducted, reports presented and officers elected. The meeting will then adjourn to Winnipeg, where it will convene on February 21, 22 and 23, and where the annual general professional meeting will be held under the auspices of the Winnipeg branch.

### American Society for Steel Treating Meeting

At the meeting of the board of directors of the American Society for Steel Treating held at Cleveland, Ohio, during the week of November 7, it was decided to hold two sectional meetings of the society during the coming year, one in New York during January or February, and the other in Pittsburgh, Pa., in May. These meetings, at which one or two well-chosen, pre-printed papers will be presented, will be of one or two days' duration and will be in addition to the annual convention and exposition which will be held at Detroit, Mich., September 25 to 30, 1922.

### Savannah Signal Section—A. R. A.

E. B. De Meritt, chairman of the Savannah Sectional Committee of the Signal Section of the American Railway Association announces that the committee will hold a meeting at the De Soto Hotel, Savannah, on Monday, November 21. J. W. Hackett, of the Okonite Company, will describe the manufacture of insulated wire, illustrating with motion pictures. W. D. Cloud, of the General Railway Signal Company, will speak on Power Interlocking; and there will be a motion picture illustrating the Use and Abuse of Drills and Reamers, presented by the Cleveland Twist Drill Company. All signal department men are invited.

### Numerous Subjects Discussed Before A. S. C. E.

The subject of the St. Lawrence Ship Canal and Power Project was presented Monday evening, November 14, before the New York Section of the American Society of Civil Engineers under the auspices of the New York sections of the four Founder Societies. Julius H. Barnes, president of the U. S. Grain Corporation, presided, the speakers being: Hon. Henry J. Allen, governor of Kansas; Hon. W. L. Harding, governor of Iowa; Dr. R. S. MacElwee, Washington, D. C., and H. I. Harriman, Boston, Mass.

On Tuesday and Wednesday, November 16 and 17, a three-

session program, including a regular business meeting, was presented to cover the following subjects: A symposium on Stream Pollution and Sewerage Disposal; a paper on Odors and Their Travel Habits, published in the August proceeding and presented for discussion at this time, and a symposium on Water Supply and Water Purification.

### Western Union on the L. & N.

The long drawn-out litigation between the Louisville & Nashville Railroad and the Western Union Telegraph Company came up again in the United States Court in Kentucky on November 5, when there was filed a report by Special Commissioner John W. Menzies, finding that the sum of \$2,300,000 is due to the railroad company from the telegraph company for the use of the railroad right-of-way for a period of about nine years. It is said that this sum is based on a rate of \$73.06 annually per mile of line.

### Ben W. Hooper To Be Guest of

#### The New York Railroad Club

Ben W. Hooper, a member of the public group of the Railroad Labor Board and former Governor of Tennessee, is to be the speaker and guest of honor at the third annual dinner of the New York Railroad Club, which will be held at the Commodore Hotel, New York, Friday evening, December 15. Mr. Hooper played a most important part in the recent wage controversy. Tickets for the dinner may be had by applying to W. J. Moody, treasurer, Erie Railroad, 50 Church street, New York City.

### N. Y. C. Leases Shops

The New York Central has leased its car repair shops at East Buffalo, N. Y., to William J. Connors, a prominent business man of that city, and work was resumed this week after an almost complete suspension for about eight months. The lessee expects to employ from 1,500 to 2,000 men. The manager of the shops, under Mr. Connors, will be James J. Barrett. It is proposed to make the work-day ten hours.

It is understood that negotiations are pending for a similar disposal of the extensive shops at West Albany, N. Y.

It is reported that the shops at Collinwood, Ohio, (Cleveland), and those at Air Line Junction, near Toledo, have been leased to the A. S. Hecker Company, of Cleveland.

### Malaria Control on the Cotton Belt

The St. Louis Southwestern has carried on an extensive campaign for the control of malaria along its lines in Arkansas and Texas during the past five years. This company has just issued a complete report, consisting of a booklet of 66 pages, describing in detail the methods used and the results obtained. Typical of the latter is the statement that the man-hours worked by the section men for each hospital case of malaria in 1916 (prior to malaria control) was about 10,000, as compared with 100,000 man-hours in 1920 (under malaria control), while the average annual number of hospital cases of malaria for the years 1913-1916 was 602, as compared with 251 for the period 1917-1920. This campaign was described in an article in the *Railway Age* issue of July 5, 1918, page 23. Since that time it has been extended and a number of towns and cities along the route have co-operated with the railroad in controlling the disease, with benefit to the entire communities. An educational car has been equipped to demonstrate the source, effect and prevention of malaria to the people in the various towns on the system, while a tank car has been provided for the distribution of oil for fighting the mosquito. The extensive use of quinine to prevent malaria among the employees of the track and bridge departments has also been studied carefully.

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses				Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structure.	Traffic.	Transportation.	General.					Total.
Alabama & Vicksburg.....	Sept. 141	\$213,715	\$63,390	\$277,105	\$29,863	\$7,814	\$117,003	\$11,402	\$217,904	72.40	\$82,959	\$64,155	\$71,141
9 mos.		1,741,136	545,063	2,286,199	461,013	72,498	1,131,508	106,031	2,296,479	93.50	158,522	290,635	298,635
Vicksburg, Shreveport & Pacific.....	Sept. 171	248,224	85,941	334,165	33,378	9,396	126,290	12,696	247,397	69.50	108,341	66,807	30,553
9 mos.		2,093,023	810,481	3,077,835	513,869	86,488	1,221,177	121,583	2,556,074	83.00	521,761	243,444	334,824
Ann Arbor.....	Sept. 293	392,289	52,920	445,209	53,671	8,083	179,672	12,661	346,514	74.00	121,688	83,884	86,171
9 mos.		3,019,663	480,356	3,500,019	479,153	82,551	1,657,196	127,713	3,161,944	85.90	517,462	339,526	333,016
Atchison, Topeka & Santa Fe.....	Sept. 8,820	12,388,437	3,684,657	16,073,094	1,441,879	244,398	5,352,109	329,902	10,925,572	63.70	6,239,306	4,347,431	2,639,220
9 mos.		94,695,796	35,494,398	130,190,194	13,334,450	2,327,491	50,775,407	3,258,946	98,019,822	70.10	41,736,748	31,937,652	17,922,837
Gulf, Colorado & Santa Fe.....	Sept. 1,907	1,906,002	377,355	2,283,357	400,450	39,536	756,716	72,450	1,813,147	76.10	568,553	515,144	476,439
9 mos.		18,027,672	3,753,090	21,780,762	4,626,963	742,817	7,462,811	670,368	16,019,064	71.20	6,472,527	5,816,233	5,257,715
Panhandle & Santa Fe.....	Sept. 857	735,749	142,981	880,729	207,907	6,160	345,437	17,075	570,761	62.60	340,415	317,134	287,715
9 mos.		5,884,182	1,252,677	7,136,859	523,472	59,708	2,461,838	184,969	5,106,552	73.10	1,880,452	1,696,347	1,396,634
Atlanta & West Point.....	Sept. 93	107,643	76,495	184,138	29,337	7,953	179,672	9,857	159,884	74.30	55,250	47,049	19,271
9 mos.		918,457	727,152	1,645,609	245,911	72,793	1,657,196	127,713	3,164,644	85.90	517,462	339,526	240,937
Western of Alabama.....	Sept. 133	149,891	69,253	219,144	32,256	7,744	69,799	9,980	182,669	75.50	59,237	52,116	51,770
9 mos.		1,044,889	649,986	1,694,875	267,563	72,121	681,900	98,994	1,647,912	87.60	231,735	159,475	173,319
Atlanta, Birmingham & Atlantic.....	Sept. 639	200,131	29,123	229,254	89,506	19,776	141,727	18,263	346,486	137.00	93,382	112,311	116,982
9 mos.		1,742,542	323,094	2,065,636	677,532	186,794	1,580,465	138,805	3,477,016	154.30	1,223,988	1,394,022	1,421,910
Atlantic Coast Line.....	Sept. 4,886	2,668,480	1,039,745	3,708,225	811,671	101,995	2,035,995	133,941	4,349,289	98.40	68,506	207,951	81,689
9 mos.		32,796,241	12,975,820	45,772,061	7,272,649	1,069,057	23,551,344	1,281,339	44,340,125	81.30	5,271,423	2,829,179	2,316,512
Charleston & Western Carolina.....	Sept. 342	195,716	39,183	234,899	62,471	6,743	168,250	6,069	242,821	95.90	10,364	7,088	5,509
9 mos.		1,936,643	384,506	2,321,149	557,411	57,990	1,264,197	63,730	2,578,780	105.30	128,967	221,544	284,449
Baltimore & Ohio.....	Sept. 5,184	13,613,876	2,532,497	16,146,373	2,455,434	296,295	6,414,385	505,325	13,564,179	77.60	3,904,433	3,508,491	3,055,536
9 mos.		115,919,505	22,663,213	148,582,718	17,599,329	2,441,588	65,858,820	4,886,224	125,093,453	84.40	23,077,321	17,589,210	15,271,197
Balt. & Ohio Chicago Term.....	Sept. 90	.....	247,660	247,660	52,032	1,462	126,340	9,955	229,261	92.60	18,399	20,137	83,716
9 mos.		86,478	107,193	193,671	318,353	12,549	1,191,061	121,299	2,011,606	107.20	134,377	470,878	385,973
Staten Island Rapid Transit.....	Sept. 23	.....	222,331	222,331	33,869	1,316	105,298	15,963	193,894	87.20	28,437	1,160	66,682
9 mos.		740,201	963,899	1,704,100	390,411	16,780	1,119,218	124,841	1,883,229	98.50	28,234	110,477	508,749
Bangor & Aroostook.....	Sept. 659	604,816	79,901	684,717	118,409	4,291	222,095	16,503	462,327	65.60	242,548	228,327	255,813
9 mos.		4,350,308	712,734	5,063,042	917,416	39,915	1,890,734	180,022	4,440,411	84.50	815,933	519,011	629,491
Belt Ry. Co. of Chicago.....	Sept. 31	.....	532,055	532,055	44,421	1,132	233,290	11,283	343,782	64.60	188,273	155,956	129,103
9 mos.		.....	4,018,059	4,018,059	528,231	9,951	1,971,514	99,261	3,082,715	76.70	935,344	689,073	1,201,541
Bessemer & Lake Erie.....	Sept. 225	1,459,948	38,981	1,498,929	185,584	19,920	363,732	26,156	1,050,103	69.40	466,732	434,123	433,517
9 mos.		10,664,110	372,382	10,936,492	1,497,351	145,646	3,344,832	259,627	9,157,480	86.10	1,478,962	1,201,381	1,462,514
Bingham & Garfield.....	Sept. 35	13,228	141	13,369	2,512	1,218	4,829	3,704	37,003	265.30	23,056	31,552	34,783
9 mos.		130,249	3,840	134,089	17,907	13,519	73,759	36,798	338,905	237.60	196,251	248,461	210,330
Boston & Maine.....	Sept. 2,300	4,092,437	2,361,209	6,453,646	933,900	65,473	3,078,865	339,080	5,781,971	81.10	1,315,034	1,087,303	826,871
9 mos.		34,746,978	18,090,683	52,837,661	12,048,109	548,874	31,299,783	2,278,556	56,370,566	97.00	1,723,850	584,527	2,800,545
Brooklyn Eastern Dist. Term.....	Sept. 9	913,299	.....	913,299	15,464	.....	38,243	6,133	70,576	67.60	3,920	27,664	20,280
9 mos.		.....	975,827	975,827	81,983	2,418	367,489	59,363	686,044	70.31	289,783	229,859	238,637
Buffalo & Susquehanna.....	Sept. 252	162,219	5,448	167,667	38,792	2,150	54,176	9,340	172,808	100.60	1,178	4,478	11,564
9 mos.		1,889,102	60,900	1,949,999	350,565	25,498	567,975	93,375	1,815,635	122.20	330,103	359,803	28,865
Buffalo, Rochester & Pittsburgh.....	Sept. 589	984,398	146,755	1,131,153	203,905	19,412	469,090	32,152	1,161,844	97.00	36,040	1,034	32,162
9 mos.		8,821,979	1,375,736	10,197,715	1,497,018	162,281	4,776,080	378,521	10,357,639	97.00	320,119	3,611	475,773
Canadian Pacific Lines in Maine.....	Sept. 233	129,667	32,583	162,250	46,630	3,771	94,029	3,222	190,311	107.40	13,141	28,141	33,948
9 mos.		1,521,964	424,619	1,946,583	428,548	33,726	1,084,716	34,944	1,991,648	95.00	105,146	29,854	61,610
Carolina, Clinchfield & Ohio.....	Sept. 291	594,638	43,189	637,827	71,484	12,733	157,823	20,278	400,175	61.50	250,261	195,196	253,088
9 mos.		4,959,908	402,893	5,362,801	756,284	201,283	1,589,662	195,651	4,080,361	74.40	1,404,030	1,106,870	1,674,778
Central of Georgia.....	Sept. 1,913	1,242,724	427,181	1,669,905	314,434	67,391	748,272	75,321	1,612,713	85.00	283,725	218,895	249,217
9 mos.		11,036,027	4,236,445	15,272,472	2,823,437	580,372	7,664,583	718,963	15,524,697	92.40	1,285,581	1,883,090	611,472
Central of New Jersey.....	Sept. 685	3,597,634	937,127	4,534,761	1,210,117	35,286	1,771,461	108,096	3,795,228	79.20	1,005,732	742,980	710,132
9 mos.		29,831,000	7,562,207	37,393,207	8,485,700	308,622	16,500,642	984,633	21,668,198	79.00	8,200,959	5,978,231	5,781,293
Central Vermont.....	Sept. 413	442,384	138,031	580,415	116,333	11,957	282,403	20,235	497,354	79.05	131,773	110,845	89,817
9 mos.		3,536,245	959,444	4,495,689	976,962	101,354	2,956,975	122,403	5,325,909	113.00	635,476	824,172	949,815
Chesapeake & Ohio.....	Sept. 2,548	3,605,350	1,080,450	4,685,800	1,074,728	68,415	2,308,143	154,755	6,359,190	76.10	1,674,476	1,443,769	1,386,457
9 mos.		31,322,956	6,974,313	38,297,269	9,312,869	586,901	24,318,491	1,503,501	51,296,865	80.20	12,675,448	10,596,988	9,265,420
Chicago & Alton.....	Sept. 1,050	2,086,591	602,040	2,688,631	436,362	57,939	1,013,594	50,997	2,246,658	78.00	634,808	548,128	412,189
9 mos.		16,480,199	5,268,693	21,748,892	4,706,626	470,626	9,392,827	548,253	20,041,190				

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
		Freight.	Passenger.	Total.	Way and structure.	Equip-ment.	Traffic.					
Chicago, Milwaukee & St. Paul.....	Sept. 10,995	\$10,384,717	\$2,451,237	\$12,835,954	\$1,731,741	\$2,902,798	\$1,782,273	73.90	\$3,722,822	\$2,969,696	\$2,331,828	\$438,533
Chicago, Milwaukee & St. Paul.....	9 mos. 10,742	76,748,661	21,012,653	97,761,314	14,004,214	25,872,771	15,940,050	88.30	12,677,770	5,989,332	1,131,938	18,131,938
Chicago, Peoria & St. Louis.....	Sept. 247	164,865	23,221	188,086	28,904	40,939	4,989	93.90	12,135	834	157,731	38,567
Chicago, Peoria & St. Louis.....	9 mos. 247	1,216,597	228,310	1,544,907	269,432	457,760	931,328	118.00	275,653	365,861	428,074	491,229
Chicago, Rock Island & Pacific.....	Sept. 7,661	9,090,389	2,576,422	11,666,811	2,021,883	2,405,106	1,791,551	75.10	3,089,038	2,584,004	2,287,183	1,135,458
Chicago, Rock Island & Pacific.....	9 mos. 7,661	70,218,850	22,713,432	92,932,282	13,980,964	21,685,498	15,851,424	81.70	18,152,904	14,004,494	10,978,090	1,255,111
Chicago, Rock Island & Gulf.....	Sept. 461	573,793	94,404	668,197	77,470	107,380	12,709	65.60	248,007	236,416	213,829	62,375
Chicago, Rock Island & Gulf.....	9 mos. 461	4,564,409	939,451	5,503,860	848,953	731,013	119,828	75.40	1,444,239	1,329,979	1,064,749	516,817
Chic., St. Paul, Minn. & Omaha.....	Sept. 1,749	1,903,327	604,792	2,508,119	354,103	451,415	316,171	71.70	761,702	614,178	594,334	475,193
Chic., St. Paul, Minn. & Omaha.....	9 mos. 1,749	14,084,937	5,361,374	19,446,311	2,613,082	4,393,415	3,097,798	86.50	2,991,844	1,155,427	837,986	950,684
Cincinnati, Ind. & Western.....	Sept. 321	246,534	58,417	304,951	79,687	107,110	11,040	112.20	142,013	142,013	142,013	17,372
Cincinnati, Ind. & Western.....	9 mos. 321	2,008,028	577,713	2,585,741	577,116	867,305	105,204	116.70	430,601	580,849	662,346	760,508
Colorado & Southern.....	Sept. 1,099	822,503	248,565	1,071,068	163,013	173,714	121,136	70.20	345,270	287,317	300,981	488,026
Colorado & Southern.....	9 mos. 1,099	7,090,338	1,886,438	8,976,776	1,430,063	2,197,650	1,082,666	80.40	1,883,570	1,236,749	1,293,818	918,154
Ft. Worth & Denver City.....	Sept. 454	694,875	259,289	954,164	137,738	181,654	111,519	61.60	398,023	357,407	351,573	249,972
Ft. Worth & Denver City.....	9 mos. 454	5,881,102	2,041,847	7,922,949	816,342	1,567,519	1,043,350	66.50	2,800,463	2,505,266	2,515,116	455,934
Wichita Valley.....	Sept. 255	88,446	33,995	122,441	25,388	10,691	101	64.30	47,654	42,395	29,822	37,369
Wichita Valley.....	9 mos. 255	867,295	260,245	1,127,540	236,305	110,867	296	69.50	362,863	306,880	212,102	23,368
Cumberland Valley & Martinsburg.....	Sept. 33	80,000	61,000	141,000	11,438	18,658	695	76.00	21,678	15,340	10,050	1,916
Cumberland Valley & Martinsburg.....	9 mos. 33	982,300	591,558	1,573,858	104,373	182,961	6,344	61.00	415,228	371,353	324,707	113,436
Delaware & Hudson.....	Sept. 880	3,178,095	464,347	3,642,442	457,417	1,323,366	423,601	85.60	552,602	462,257	564,476	1,066,031
Delaware & Hudson.....	9 mos. 880	29,577,197	3,200,385	32,777,582	3,634,185	9,453,439	3,703,958	84.00	5,504,722	4,791,723	5,268,169	397,615
Dela., Lackawanna & Western.....	Sept. 994	5,427,270	1,413,162	6,840,432	907,300	1,337,108	1,350,480	89.40	2,624,132	1,913,723	1,930,927	854,981
Dela., Lackawanna & Western.....	9 mos. 994	47,898,820	11,266,124	59,164,944	7,640,162	14,688,964	9,540,626	80.30	12,869,442	9,373,937	9,825,096	26,451
Denver & Rio Grande Western.....	Sept. 2,593	2,716,945	31,029	2,748,074	798,306	677,957	430,341	79.60	744,545	594,388	594,784	1,130,088
Denver & Rio Grande Western.....	9 mos. 2,593	17,205,668	4,716,263	21,921,931	4,663,538	5,871,724	3,701,115	86.30	3,231,984	1,894,440	2,316,651	3,888,030
Denver & Salt Lake.....	Sept. 255	274,552	36,379	310,931	88,774	63,249	1,508	85.40	47,734	38,794	31,478	3,903
Denver & Salt Lake.....	9 mos. 255	1,679,111	303,317	1,982,428	517,920	609,898	10,250	100.10	21,353	75,256	69,838	809,378
Detroit & Mackinac.....	Sept. 385	14,472	35,514	49,986	30,836	50,020	2,169	81.09	36,353	25,353	22,675	26,675
Detroit & Mackinac.....	9 mos. 385	1,092,207	310,502	1,402,709	236,146	409,254	22,125	90.80	139,151	134,057	142,331	64,634
Detroit & Toledo Shore Line.....	Sept. 61	264,607	110,000	374,607	26,631	18,661	2,213	44.80	151,227	137,227	93,665	104,198
Detroit & Toledo Shore Line.....	9 mos. 61	1,955,425	591,558	2,546,983	198,997	268,437	57,475	60.80	779,088	635,023	302,828	98,843
Duluth & Iron Range.....	Sept. 291	594,171	16,592	610,763	88,732	66,441	989	50.20	332,173	291,038	290,732	748,556
Duluth & Iron Range.....	9 mos. 291	3,768,150	211,054	3,979,204	437,313	889,853	10,935	79.80	881,750	605,597	604,001	3,674,752
Duluth, Missabe & Northern.....	Sept. 409	1,805,789	44,811	1,850,600	159,720	171,014	5,847	79.70	1,417,730	1,247,570	1,243,773	1,376,270
Duluth, Missabe & Northern.....	9 mos. 409	9,372,999	470,405	9,843,404	1,674,457	1,566,608	29,849	55.60	4,850,134	3,839,896	3,809,623	7,240,538
Duluth, South Shore & Atlantic.....	Sept. 591	252,569	97,286	349,855	88,389	50,418	6,297	81.70	72,424	45,424	35,060	61,109
Duluth, South Shore & Atlantic.....	9 mos. 591	2,212,564	904,685	3,117,249	686,466	769,505	62,085	102.90	98,705	363,826	467,017	319,463
Duluth, Winnipeg & Pacific.....	Sept. 178	129,239	27,024	156,263	82,165	37,273	7,912	132.30	51,754	61,082	65,041	8,037
Duluth, Winnipeg & Pacific.....	9 mos. 178	1,467,060	274,894	1,741,954	344,225	397,153	50,432	99.50	7,596	86,940	105,312	46,736
Elgin, Joliet & Eastern.....	Sept. 836	1,292,719	10	1,292,729	250,085	237,806	111,627	71.30	409,775	275,577	109,194	960,072
Elgin, Joliet & Eastern.....	9 mos. 836	13,228,435	102	13,228,537	1,843,043	3,450,090	1,110,322	73.80	3,816,183	3,103,082	2,009,865	1,400,558
El Paso & Southwestern.....	Sept. 1,027	528,510	164,620	693,130	159,720	134,087	25,411	74.70	188,489	99,995	106,615	297,356
El Paso & Southwestern.....	9 mos. 1,027	6,179,505	1,790,228	7,969,733	1,501,214	1,751,560	251,879	78.20	1,842,396	1,015,190	789,729	1,520,988
Erie.....	Sept. 1,989	7,382,663	1,243,698	8,626,361	1,393,717	2,514,685	1,365,338	85.70	1,329,244	1,025,011	1,074,294	622,328
Erie.....	9 mos. 1,989	60,770,478	10,989,114	71,759,592	9,269,479	22,534,829	11,733,301	92.20	5,999,651	3,339,663	4,010,890	13,745,081
Chicago & Erie.....	Sept. 269	832,895	72,511	905,406	150,789	167,097	20,531	90.50	89,551	45,804	258,169	224,606
Chicago & Erie.....	9 mos. 269	6,826,949	653,053	7,480,002	1,078,751	1,371,783	175,578	94.30	452,373	58,544	2,073,500	2,400,399
New Jersey & New York.....	Sept. 47	20,295	104,889	125,184	23,748	16,385	1,167	86.30	17,809	14,800	6,474	12,541
New Jersey & New York.....	9 mos. 47	170,018	919,944	1,089,962	132,630	186,572	11,698	86.50	15,693	135,317	115,047	223,725
N. Y., Susquehanna & Western.....	Sept. 135	229,078	66,034	295,112	72,055	69,238	3,465	103.13	10,541	46,530	2,880	120,704
N. Y., Susquehanna & Western.....	9 mos. 135	2,238,685	598,443	2,837,128	490,027	682,228	34,654	93.39	148,079	85,095	45,365	861,688
Florida East Coast.....	Sept. 764	419,973	196,343	616,316	311,368	181,638	10,258	116.00	114,780	218,544	260,918	16,473
Florida East Coast.....	9 mos. 764	5,898,464	3,224,114	9,122,578	2,217,026	2,000,902	119,806	88.20	1,854,665	1,257,507	892,190	1,624,383
Fort Smith & Western.....	Sept. 253	106,436	26,238	132,674	31,031	30,217	4,678	88.50	16,230	11,230	3,923	36,341
Fort Smith & Western.....	9 mos. 253	946,039	234,469	1,180,508	327,634	313,484	45,513	101.70	21,567	70,330	120,288	15,493
Galveston Wharf.....	Sept. 13	.....	.....	.....	210,010	69,982	704	74.40	54,661	37,630	38,076	58,735
Galveston Wharf.....	9 mos. 13	.....	.....	.....	391,270	40,767	6,887	73.50	968,426	815,327	816,868	32,202
Georgia.....	Sept. 328	326,942	107,982	434,924	48,275	83,791	17,396	59.50	97,341	91,306	88,073	7,033
Georgia.....	9 mos. 328	2,617,727	1,017,723	3,635,450	439,307	937,246	178,118	100.20	7,030	64,188	27,650	324,118
Georgia & Florida.....	Sept. 405	93,821	18,637	112,458	23,688	19,961	9,458	90.10	12,261	4,589	2,092	26,034
Georgia & Florida.....	9 mos. 405	807,553	156,980	964,533	176,732	259,546	71,773	104.80	49,337	120,881	188,177	762,661
Grand Trunk Western.....	Sept. 352	1,066,782	257,757	1,324,539	248,016	344,399	50,716	89.40	147,180	467,078	592,927	339,980
Grand Trunk Western.....	9 mos. 352	8,760,401	1,812,942	10,573,343	1,705,548	2,385,057	314,011	91.50	942,221	1,031,597	1,414,036	1,035,566
Atlantic & St. Lawrence.....	Sept. 166	127,073	50,956	178,029	147,574	46,961	4,310	175.10	151,143	168,865	202,252	151,057
Atlantic & St. Lawrence.....	9 mos. 166	1,539,265	402,370	1,941,635	384,132	589,317	168,330	118.00	398,672	504,966	1,116,036	1,504,458
Chic., Del. & Canada, Gd. Tr. Jct. Sept.	62	174,585	197,276	371,861	2,755	480,937	2,755	67.00	390,747	29,365	78,987	78,987
Chic., Del. & Canada, Gd. Tr. Jct. Sept.	9 mos. 62	1,431,507	124,443	1,555,950	154,038	188,299	43,592	72.00	390,747	29,365	78,987	78,987
Detroit, Gr. Haven & Milwaukee.....	Sept. 194	2,580,346	416,738	3,181,569	578,019	578,019	91,852	102.10	68,122	104,835	692,606	826,618
Detroit, Gr. Haven & Milwaukee.....	9 mos. 194	2,580,346	416,738	3,181,569	578,019	578,019	91,852	102.10	68,122	104,835	692,606	826,618

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structure.	Traffic.	Trans- portation.					
Great Northern .....	Sept. 8,162	\$8,514,354	\$1,523,993	\$10,038,347	\$1,871,241	\$121,453	\$3,481,556	64.10	\$3,959,388	\$3,142,295	\$3,142,295	\$3,142,295
Green Bay and Western .....	9 mos. 8,162	\$8,514,354	\$1,523,993	\$10,038,347	\$1,871,241	\$121,453	\$3,481,556	64.10	\$3,959,388	\$3,142,295	\$3,142,295	\$3,142,295
Green Bay and Western .....	9 mos. 8,162	\$8,514,354	\$1,523,993	\$10,038,347	\$1,871,241	\$121,453	\$3,481,556	64.10	\$3,959,388	\$3,142,295	\$3,142,295	\$3,142,295
Gulf & Ship Island .....	Sept. 307	204,485	41,928	246,413	41,108	9,154	86,100	70.40	77,994	51,891	43,008	27,245
Gulf, Mobile & Northern .....	9 mos. 307	1,576,276	403,995	2,180,271	388,764	58,561	800,100	83.80	343,297	160,675	155,975	37,950
Hocking Valley .....	Sept. 350	1,053,715	111,672	1,165,387	214,986	11,234	402,651	62.70	456,955	389,085	296,942	354,482
Illinois Central .....	9 mos. 350	8,794,975	977,450	9,772,425	1,370,323	98,775	3,728,636	88.20	1,229,923	480,018	313,952	1,038,039
Yazoo & Mississippi Valley .....	Sept. 4,799	79,635,334	18,894,531	98,529,865	16,220,664	1,395,263	40,476,872	82.50	18,650,650	12,598,857	13,685,148	2,428,977
International & Great Northern .....	9 mos. 1,381	10,955,628	3,098,266	14,053,894	2,175,255	22,151	609,904	86.70	239,772	120,045	113,960	136,814
Kansas City, Mexico & Orient .....	Sept. 272	1,185,813	126,186	1,311,999	289,041	41,427	50,259	92.10	1,182,371	176,276	135,516	1,091,297
Kans. City, Mex. & Orient of Tex. .....	Sept. 465	1,600,008	176,670	1,776,678	39,606	4,978	90,161	87.45	1,76,848	136,158	75,457	44,407
Kansas City Southern .....	9 mos. 779	1,315,064	179,121	1,494,185	279,914	34,951	485,069	91.87	1,28,732	789,700	214,549	238,326
Texaslana & Ft. Smith .....	Sept. 93	1,188,399	16,506	1,204,905	20,481	5,803	48,847	72.80	4,062,142	3,49,424	3,189,419	1,231,090
Kansas City Terminal .....	Sept. 27	.....	.....	.....	25,062	20,547	49,720	68.48	58,025	22,507	249,158	226,072
Kansas, Oklahoma & Gulf .....	Sept. 314	1,580,556	10,410	1,590,966	163,595	18,712	480,209	75.09	292,353	44,443	2,018,465	1,520,454
Lake Superior & Ishpeming .....	Sept. 33	86,143	46	86,189	17,755	12,313	16,300	84.00	28,779	19,713	11,308	18,988
Lake Terminal .....	Sept. 13	.....	.....	.....	8,825	11,359	523,059	95.50	76,707	5,630	86,008	344,911
Lehigh & Hudson River .....	Sept. 96	2,388,806	47,955	2,436,761	36,431	1,492	1,028,384	75.50	61,869	49,718	27,234	69,333
Lehigh & New England .....	Sept. 96	2,388,806	47,955	2,436,761	36,431	1,492	1,028,384	75.50	61,869	49,718	27,234	69,333
Lehigh Valley .....	Sept. 1,448	5,483,916	734,209	6,218,125	1,515,053	93,912	2,356,058	73.60	62,802	518,689	316,238	160,438
Los Angeles & Salt Lake .....	Sept. 1,448	5,483,916	734,209	6,218,125	1,515,053	93,912	2,356,058	73.60	62,802	518,689	316,238	160,438
Louisiana & Arkansas .....	Sept. 302	264,040	29,101	293,141	41,522	6,604	80,994	66.00	102,462	86,113	81,147	54,760
Louisiana Ry. & Nav. Co. ....	Sept. 343	2,118,188	309,210	2,427,398	475,184	56,489	873,458	83.50	412,654	263,648	200,063	489,391
Louisville & Nashville .....	Sept. 343	2,118,188	309,210	2,427,398	475,184	56,489	873,458	83.50	412,654	263,648	200,063	489,391
Leiterville, Henderson & St. Louis ..	Sept. 199	1,409,575	581,336	1,990,911	391,004	59,426	818,733	78.00	641,915	496,973	275,529	32,943
Maine Central .....	Sept. 1,215	1,188,820	486,448	1,675,268	364,425	14,518	749,027	82.90	1,748,645	1,477,574	1,479,048	1,297,547
Midland Valley .....	Sept. 388	2,667,712	68,853	2,736,565	67,891	4,087	1,127,112	94.90	4,457,946	1,817,168	991,293	1,046,580
Minneapolis & St. Louis .....	Sept. 1,650	1,294,624	186,443	1,481,067	332,134	33,074	610,289	81.73	394,053	327,581	197,291	191,260
Minneapolis & St. Louis .....	Sept. 1,650	1,294,624	186,443	1,481,067	332,134	33,074	610,289	81.73	394,053	327,581	197,291	191,260
Minneapolis & St. Louis .....	Sept. 1,650	1,294,624	186,443	1,481,067	332,134	33,074	610,289	81.73	394,053	327,581	197,291	191,260
Missouri Central .....	Sept. 258	1,123,962	18,183	1,142,145	24,760	4,111	42,105	80.00	27,286	21,032	12,512	21,295
Missouri & North Arkansas .....	Sept. 364	622,448	175,894	798,342	178,879	26,942	307,780	103.15	26,156	83,224	99,342	337,332
Missouri, Kansas & Texas .....	Sept. 364	622,448	175,894	798,342	178,879	26,942	307,780	103.15	26,156	83,224	99,342	337,332
Mo., Kans. & Texas of Texas .....	Sept. 1,715	1,709,608	539,143	2,248,751	625,222	38,107	606,424	155.80	369,125	409,596	484,522	324,447
Wichita Falls & Northwestern .....	Sept. 328	1,832,279	35,226	1,867,505	41,877	892	708,628	73.00	784,416	628,464	720,080	848,077
Missouri Pacific .....	Sept. 7,300	7,721,873	1,596,907	9,318,780	1,281,302	147,739	3,700,715	80.10	4,975,902	3,589,763	4,900,887	3,285,610
Missouri Pacific .....	Sept. 7,300	7,721,873	1,596,907	9,318,780	1,281,302	147,739	3,700,715	80.10	4,975,902	3,589,763	4,900,887	3,285,610
Missouri Pacific .....	Sept. 7,300	7,721,873	1,596,907	9,318,780	1,281,302	147,739	3,700,715	80.10	4,975,902	3,589,763	4,900,887	3,285,610

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenue			Maintenance of way and equipment			Operating expenses			Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
		Freight.	Passenger.	Total (inc. misc.).	Way and structure.	Equip- ment.	Traffic.	Trans- portation.	General.	Total.					
Mobile & Ohio.....	1,165	\$1,124,914	\$166,972	\$1,291,886	\$186,084	\$364,295	\$41,535	\$51,318	\$56,027	\$1,200,075	80.30	\$294,970	\$222,875	\$203,076	\$164,512
.....9 mos.	1,165	11,363,949	1,425,600	13,789,549	1,907,233	3,742,364	417,688	573,519	474,994	12,798,777	91.30	1,173,319	624,821	517,907	1,167,051
Columbus & Greenville.....	226	104,125	29,359	142,466	29,208	15,644	2,106	3,187	7,267	106,062	75.00	35,394	19,023	3,567	66,600
.....9 mos.	258	772,773	256,861	1,029,634	331,704	174,659	26,664	61,671	58,493	1,209,191	110.00	110,619	241,816	438,391	654,840
Monongahela.....	106	380,798	32,133	412,931	57,024	58,588	1,399	98,608	7,909	223,528	53.37	195,282	188,776	148,008	65,314
.....9 mos.	106	2,612,363	321,261	2,933,624	648,754	608,502	16,567	905,853	74,064	2,533,740	75.72	722,741	664,235	228,697	530,935
Monongahela Connecting.....	7	.....	.....	61,361	12,877	24,987	506	29,036	5,150	72,556	118.20	11,195	12,235	16,664	15,322
.....9 mos.	7	.....	.....	524,175	83,737	131,622	4,821	288,814	53,864	562,858	107.40	38,683	54,508	92,800	319,592
Montour.....	56	92,738	747	93,485	37,766	30,758	910	25,870	6,152	101,456	107.67	7,228	8,317	782	66,682
.....9 mos.	56	1,083,434	8,986	1,092,420	256,838	479,403	10,114	304,373	64,391	1,115,393	100.63	6,939	37,827	161,199	213,372
Nashville, Chattanooga & St. Louis.....	1,238	1,249,619	414,987	1,664,606	185,266	407,972	68,243	674,165	52,192	1,391,840	76.20	434,209	394,142	402,840	183,874
.....9 mos.	1,258	10,593,330	3,855,655	14,448,985	2,315,246	3,963,529	631,594	7,160,386	503,886	14,620,476	93.80	962,803	524,642	844,525	5,909
Nevada Northern.....	165	17,384	2,878	20,262	10,733	3,511	905	5,626	3,964	24,739	106.39	1,488	6,315	4,262	7,705
.....9 mos.	164	186,256	46,381	232,637	100,423	54,085	5,576	110,525	30,883	301,744	114.50	38,235	116,779	94,059	339,089
Newburgh & South Shore.....	164	.....	.....	29,765	21,081	29,897	.....	46,484	3,921	101,383	78.13	17,283	17,283	17,255	18,410
.....9 mos.	7	.....	.....	961,520	114,089	233,577	.....	463,407	39,071	850,144	88.42	111,376	16,011	38,916	276,279
New Orleans Great Northern.....	274	163,974	43,747	207,721	37,046	64,978	5,107	82,275	9,331	199,037	90.90	20,023	1,887	16,970	25,567
.....9 mos.	274	1,440,569	406,031	1,846,600	311,044	388,429	48,093	806,519	89,614	1,647,509	85.30	283,182	136,470	65,021	84,128
New York Central.....	6,078	17,035,923	8,485,633	25,521,556	4,093,888	6,376,008	309,642	9,707,848	663,300	21,472,705	75.10	7,093,024	5,452,495	5,322,916	4,727,528
.....9 mos.	6,077	143,388,385	70,727,022	214,115,407	28,585,187	55,330,213	2,866,868	96,240,645	7,192,299	193,662,918	80.70	46,360,667	31,458,032	32,484,661	4,768,761
Cincinnati Northern.....	244	364,352	17,397	381,749	59,166	50,924	3,125	107,989	6,989	228,167	58.30	163,103	143,137	115,897	39,347
.....9 mos.	245	2,609,134	174,011	2,783,145	430,928	928,494	43,502	990,455	66,932	2,653,418	71.50	818,764	671,537	595,682	166,777
Cleveland, Cin., Chic. & St. Louis.....	2,410	4,930,529	1,580,684	6,511,213	928,994	1,729,181	103,438	2,476,234	164,056	5,141,102	77.50	1,597,523	1,217,089	1,278,356	1,054,284
.....9 mos.	2,415	42,019,501	13,353,546	55,373,047	8,366,957	13,523,053	977,994	25,476,771	1,513,778	50,349,411	83.90	9,689,482	6,744,032	5,674,399	5,310,203
Indiana Harbor Belt.....	120	.....	.....	836,281	120,477	161,418	3,279	272,568	20,250	577,992	69.11	258,289	240,338	131,183	11,941
.....9 mos.	120	.....	.....	6,670,869	870,628	1,303,949	3,820	2,923,414	219,982	5,351,933	80.22	1,318,936	1,124,459	1,161,670	3,407,662
Kanawha & Michigan.....	176	376,364	59,069	435,433	67,782	142,432	3,350	145,154	11,128	369,846	81.80	82,522	48,657	60,107	118,862
.....9 mos.	176	2,972,096	540,920	3,513,016	650,071	1,318,665	34,783	1,223,488	99,699	3,376,618	92.70	267,488	39,443	284,852	252,253
Lake Erie & Western.....	738	728,620	49,440	778,060	140,353	199,155	18,094	290,671	25,870	673,059	82.90	139,107	88,800	62,431	214,875
.....9 mos.	738	5,959,248	519,130	6,478,378	1,066,631	1,812,797	170,370	3,026,613	246,261	6,372,906	94.40	383,464	2,046,660	2,530,993	2,297,792
Michigan Central.....	1,866	4,181,684	1,782,296	5,963,979	704,125	1,134,671	87,747	3,027,836	141,420	4,277,298	65.20	2,286,081	2,060,660	2,059,735	1,656,135
.....9 mos.	1,866	33,488,137	15,505,997	48,994,134	6,371,006	11,215,562	847,357	21,788,088	1,338,232	42,556,591	78.10	11,851,045	9,829,592	9,814,582	2,355,572
Pittsburgh & Lake Erie.....	227	1,375,891	237,075	1,612,966	362,025	673,682	19,388	594,432	60,586	1,711,980	99.60	7,178	213,168	82,697	652,674
.....9 mos.	227	13,715,430	2,322,603	16,038,033	2,929,513	5,406,902	186,848	6,875,225	640,524	16,052,425	92.80	1,242,436	732,590	1,289,730	1,133,272
Toledo & Ohio Central.....	503	898,788	77,391	976,179	147,122	286,921	9,635	330,529	24,808	801,354	78.90	213,873	151,567	155,799	306,118
.....9 mos.	503	6,965,432	697,171	7,662,603	1,342,083	1,913,494	94,983	3,152,685	252,609	6,780,740	84.90	1,206,276	688,546	928,293	329,739
New York, Chicago & St. Louis.....	574	2,190,884	125,500	2,316,384	299,755	425,971	65,272	826,151	122,130	1,743,991	73.10	641,017	438,095	425,749	99,069
.....9 mos.	574	18,517,514	1,103,311	19,620,825	2,139,050	4,007,120	502,228	8,074,480	731,951	15,494,586	77.40	4,522,629	3,388,404	3,258,513	2,896,549
New York, New Haven & Hartford.....	1,986	4,556,181	4,686,405	9,242,586	1,644,574	2,376,192	67,060	4,171,280	332,212	8,775,538	85.70	1,466,606	1,098,871	1,068,491	530,710
.....9 mos.	1,986	38,568,981	38,516,435	77,085,416	13,590,032	21,013,136	556,475	41,792,081	3,115,912	81,690,481	95.50	3,885,175	319,285	3,019,179	10,377,646
Central New England.....	301	643,268	23,663	666,931	170,320	90,756	4,301	192,311	12,790	470,478	68.40	217,003	195,518	156,285	41,469
.....9 mos.	301	5,722,344	224,948	5,947,292	1,190,309	910,770	35,727	2,282,795	129,702	4,549,708	73.60	1,632,413	1,449,048	872,925	2,226,273
New York, Ontario & Western.....	569	725,874	338,017	1,063,891	297,487	195,142	14,858	466,176	27,799	1,001,462	81.50	227,557	192,026	162,546	122,723
.....9 mos.	569	6,458,773	3,028,112	9,486,885	1,723,538	2,531,681	130,667	4,574,064	288,298	9,248,248	84.50	1,695,248	1,368,919	1,161,868	241,230
Norfolk & Western.....	2,231	5,392,420	868,765	6,261,185	961,174	1,594,568	81,406	2,155,410	145,478	4,948,786	75.40	1,618,486	1,218,264	1,443,300	1,306,915
.....9 mos.	2,223	49,167,557	7,714,564	56,882,121	8,844,815	14,481,419	648,296	23,432,734	1,398,724	48,931,086	82.40	10,421,202	6,887,129	8,796,765	11,661
Norfolk & Southern.....	942	4,595,568	135,982	4,731,550	109,092	81,418	22,768	260,539	31,158	505,598	79.30	132,035	99,360	89,220	43,236
.....9 mos.	942	4,260,020	1,242,232	5,869,084	973,648	891,954	201,912	2,735,695	294,894	5,101,987	86.90	767,097	474,809	391,464	890,378
Northern Pacific.....	6,655	7,623,080	1,585,566	9,208,646	1,562,598	1,865,218	131,995	3,122,225	208,802	6,987,916	70.84	2,876,556	2,184,712	2,455,292	1,987,385
.....9 mos.	6,655	47,500,697	13,549,942	61,050,639	12,106,563	15,504,822	1,114,967	27,402,481	2,184,551	59,242,248	88.30	7,490,437	1,386,706	3,527,995	5,385,961
Northwestern Pacific.....	525	3,451,483	2,263,405	5,714,888	1,111,540	817,759	55,332	2,519,981	149,379	4,673,066	72.20	1,803,176	1,472,286	1,380,887	1,009,334
Pennsylvania.....	7,323	27,576,013	11,106,502	38,682,515	5,694,372										

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues—			Operating expenses—			Total.	Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals.
		Freight.	Passenger.	Total (inc. misc.).	Maintenance of way and structure.	Equip. ment.	Traffic.	Trans- portation.					
New York, Phila. & Norfolk.....	Sept. 122	\$375,000	\$97,100	\$472,100	\$156,031	\$43,379	\$7,060	\$310,861	105.00	\$26,162	\$47,504	\$59,050	\$13,832
9 mos. 122		3,350,900	910,643	4,261,543	1,455,018	466,503	72,703	2,971,925	109.20	430,825	617,768	770,730	133,647
Pittsburgh, Cin., Chic. & St. L.....	Sept. 2,406	4,979,900	1,662,242	6,642,142	2,163,583	1,017,592	134,362	3,579,396	94.00	458,417	31,889	258,701	53,434
9 mos. 2,406		46,281,200	17,564,295	63,845,495	20,336,369	9,530,184	1,112,901	33,642,023	94.70	3,808,659	489,086	2,051,485	12,210,368
West Jersey & Seashore.....	Sept. 359	427,800	853,000	1,280,800	178,835	361,202	14,585	576,027	78.10	298,814	202,455	170,963	16,049
9 mos. 359		2,839,105	6,942,968	9,782,073	1,521,781	1,854,759	123,997	5,113,235	85.70	1,495,254	801,294	629,501	87,597
Peoria & Pekin Union.....	Sept. 19	14,631	1,117	15,748	52,068	28,470	986	658,074	80.26	27,046	573	37,053	24,648
9 mos. 19		129,614	20,163	149,777	155,068	280,256	62,821	1,115,351	80.76	79,046	53,301	147,140	262,983
Pere Marquette.....	Sept. 2,227	3,038,266	561,099	3,599,365	1,194,948	807,093	49,142	1,259,246	70.20	1,161,424	1,065,955	912,575	447,856
9 mos. 2,227		21,344,298	4,726,782	26,071,080	8,958,741	6,058,741	443,010	11,661,488	70.20	5,940,200	4,583,214	3,919,302	772,764
Philadelphia & Reading.....	Sept. 1,126	5,861,484	306,010	6,167,494	1,716,340	1,773,199	55,068	2,169,910	73.90	1,694,102	1,544,039	1,648,122	633,392
9 mos. 1,126		52,358,526	7,782,354	60,140,880	17,610,764	17,408,931	1,449,153	52,756,865	84.10	10,000,504	8,200,426	6,400,448	4,900,393
Atlantic City.....	Sept. 177	145,362	341,427	486,789	75,904	43,929	5,975	222,761	71.00	145,690	126,959	87,769	2,991
9 mos. 177		1,051,990	2,741,245	3,793,235	546,843	490,481	34,171	1,988,426	79.70	785,224	613,504	297,332	330,119
Perkionen.....	Sept. 41	85,349	11,106	96,455	12,533	3,960	299	42,203	60.70	39,331	29,660	23,160	68,143
9 mos. 41		824,348	92,687	917,035	135,068	36,387	515	353,370	51.40	463,284	398,230	347,334	337,308
Port Reading.....	Sept. 21	150,757	.....	150,757	28,602	16,636	651	58,413	56.30	84,869	71,214	13,697	41,152
9 mos. 21		1,218,295	.....	1,218,295	200,461	72,446	1,438	641,772	54.90	766,201	640,329	101,159	384,434
Pittsburgh & Shawmut.....	Sept. 102	127,352	4,096	131,448	20,676	25,153	1,438	33,191	64.30	48,243	48,082	53,617	77,870
9 mos. 102		856,451	50,362	906,813	215,847	350,428	16,538	335,471	106.40	59,367	68,427	130,024	398,248
Pittsburgh & West Virginia.....	Sept. 63	128,162	169,425	297,587	68,743	66,942	1,543	47,378	118.80	31,998	53,983	62,261	39,306
9 mos. 63		1,064,075	1,099,631	2,163,706	432,686	499,007	17,381	525,794	117.30	253,056	436,314	423,112	253,614
Pittsburgh, Shawmut & Northern.....	Sept. 210	82,484	6,173	88,657	39,126	25,297	1,424	36,832	128.30	26,161	28,430	28,009	39,522
9 mos. 210		794,335	64,780	859,115	257,088	400,296	13,852	411,178	131.10	273,531	294,750	175,404	57,957
Quincy, Omaha & Kansas City.....	Sept. 252	78,172	236,708	314,880	30,697	16,524	965	48,350	86.50	15,502	15,417	7,070	11,786
9 mos. 252		662,771	2,370,785	3,033,556	324,571	324,571	7,177	256,137	111.00	112,886	146,637	184,316	194,702
Rich. Fredericksburg & Potomac.....	Sept. 117	39,317	285,053	324,370	81,438	127,222	7,820	3,158,116	79.30	1,583,615	1,266,331	901,635	1,586,638
9 mos. 117		3,955,023	2,791,131	6,746,154	1,123,346	1,300,754	72,820	3,158,116	79.30	1,583,615	1,266,331	901,635	1,586,638
Rutland.....	Sept. 415	266,765	169,648	436,413	110,345	80,165	8,753	206,688	77.60	120,675	96,962	100,012	130,828
9 mos. 415		2,397,876	1,219,808	3,617,684	972,783	913,947	78,426	2,009,518	91.50	371,922	155,925	269,506	279,748
St. Louis-San Francisco.....	Sept. 4,760	4,996,462	1,670,686	6,667,148	1,362,035	1,362,035	89,971	2,434,041	69.80	2,174,367	1,871,918	1,824,568	2,193,733
9 mos. 4,760		41,612,894	15,803,377	57,416,271	7,012,263	11,403,797	750,512	24,134,880	73.50	16,243,958	13,665,705	13,420,134	5,048,438
Ft. Worth & Rio Grande.....	Sept. 235	118,918	36,027	154,945	41,212	26,470	2,802	61,881	83.00	28,288	24,651	5,801	11,589
9 mos. 235		820,998	373,888	1,194,886	331,836	230,153	28,470	709,715	104.30	56,201	88,949	197,851	792,677
St. Louis, San Fran. & Texas.....	Sept. 134	157,759	16,998	174,757	210,868	32,093	3,176	61,272	61.70	80,667	78,620	64,356	61,356
9 mos. 134		1,257,759	160,192	1,417,951	334,195	273,644	30,068	720,038	98.40	23,519	5,936	266,899	652,069
St. Louis Southwestern.....	Sept. 968	1,204,756	139,686	1,344,442	191,564	189,309	43,362	346,090	58.70	581,913	501,307	493,385	755,226
9 mos. 968		10,484,844	1,351,487	11,836,331	1,533,646	2,008,845	416,838	3,561,492	65.40	4,278,582	3,747,784	3,519,329	5,143,219
St. Louis Southwest. of Tex.....	Sept. 807	501,414	113,459	614,873	180,978	135,186	19,687	304,969	102.30	15,211	39,247	18,406	147,216
9 mos. 807		4,204,189	948,607	5,152,796	1,426,160	1,487,321	185,912	2,949,908	114.80	820,844	1,037,672	902,535	1,733,671
San Antonio & Aransas Pass.....	Sept. 738	505,442	105,684	611,126	126,963	114,547	9,613	223,693	76.80	150,128	135,915	132,195	274,149
9 mos. 738		3,585,070	818,713	4,403,783	1,002,463	974,798	88,912	2,264,221	97.20	127,756	4,633	17,344	422,581
San Antonio, Uvalde & Gulf.....	Sept. 317	51,883	24,398	76,281	18,350	13,876	2,660	34,197	84.57	13,676	10,743	2,827	2,576
9 mos. 317		600,640	223,984	824,624	133,813	145,989	27,863	350,660	76.92	215,147	189,513	94,993	338,206
Seaboard Air Line.....	Sept. 3,563	2,197,636	714,729	2,912,365	358,522	554,546	105,079	1,461,524	79.40	685,490	535,124	408,573	519,349
9 mos. 3,563		21,375,295	7,396,641	28,771,936	3,574,373	5,878,604	1,095,868	15,730,740	88.80	3,519,505	2,179,144	890,166	1,608,456
Southern.....	Sept. 6,971	7,268,883	2,798,019	10,066,902	1,500,106	1,828,303	205,060	4,165,814	73.60	2,910,753	2,509,847	2,206,959	12,570,434
9 mos. 6,971		62,208,525	24,480,233	86,688,758	14,932,238	17,983,914	1,915,426	42,494,258	85.50	13,725,906	10,354,742	7,196,199	12,570,434
Alabama Great Southern.....	Sept. 313	547,551	169,975	717,526	99,092	150,707	22,179	355,754	86.90	99,363	71,293	84,264	185,564
9 mos. 313		4,985,923	1,559,352	6,545,275	1,042,182	1,479,429	199,957	3,271,661	90.10	690,650	450,157	497,890	1,831,759
Cin., New Or. & Tex. Pacific.....	Sept. 338	977,861	300,065	1,277,926	1,354,025	1,787,011	29,656	528,799	83.20	227,893	176,314	201,254	538,092
9 mos. 338		9,461,876	2,698,891	12,160,767	1,803,242	3,156,164	266,786	5,469,614	86.40	1,757,954	1,306,915	1,406,408	3,493,889
Georgia Southern & Florida.....	Sept. 402	249,801	77,471	327,272	77,049	51,784	8,531	182,190	88.00	43,563	26,415	29,171	62,793
9 mos. 402		2,265,106	766,296	3,031,402	732,006	703,037	79,975	1,921,909	106.30	20,547	364,929	570,568	27,202
New Orleans & Northeastern.....	Sept. 207	365,937	86,046	451,983	80,335	117,282	12,540	224,591	90.00	50,695	3,008	3,598	77,068
9 mos. 207		3,529,906	818,385	4,348,291	804,959	974,691	112,968	2,388,558	93.80	298,180	117,453	243,973	654,317
Northern Alabama.....	Sept. 110	57,029	10,896	67,925	20,104	1,627	1,086	29,945	80.20	14,033	10,224	11,688	7,404
9 mos. 110		502,852	116,725	619,577	168,815	330,661	17,385	317,675	88.30	75,235	43,979	69,066	71,750
Southern Pacific.....	Sept. 7,110	11,794,098	3,932,402	15,726,500	2,613,965	2,613,965	24,381	5,443,997	66.30	5,775,807	4,634,385	4,371,292	5,144,062
9 mos. 7,110		90,775,580	37,924,555	128,700,135	20,200,402	24,417,049	1,981,797	53,365,115	74.60	36,448,903	27,350,485	25,460,082	14,971,448
Arizona Eastern.....	Sept. 382	158,461	27,374	185,835	34,484	27,355	3,504	52,798	70.20	58,702	32,621	23,429	64,429
9 mos. 382		1,613,512	337,353	1,950,865	399,604	368,698	33,892	793,221	85.70	302,909	100,819	11,597	195,599
Atlantic S. S. Lines.....	Sept. ....	784,363	63,011	847,374	15,342	878,638	25,932	882,215	100.40	3,577	17,781	18,081	195,599
9 mos. ....		6,802,424	536,900	7,339,324	134,222	1,909,688	156,365	4,960,675	95.70	332,668	225,576	115,867	4,918,108

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1921—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues				Operating expenses				Operating ratio.	Net from railway operations.	Operating income (or loss).	Net after rentals.	Net after rentals, 1920.
		Freight.	Passenger.	Total.	Inc. misc.	Way and structure.	Equip. ment.	Traffic.	Trans- portation.					
Galveston, Harrisburg & S. Ant. ....	1,380	\$1,500,650	\$442,103	\$2,076,336		\$430,472	\$367,764	\$43,850	\$724,102	79.70	\$421,399	\$179,872	\$341,898	\$16,683
Houston & Texas Central. ....	932	938,882	295,171	1,290,435		3,595,440	3,842,199	418,639	7,386,127	85.30	2,798,309	2,410,749	1,620,155	41,072
Houston, East & West Texas. ....	191	1,253,514	47,971	2,766,616		66,642	41,282	3,560	93,122	75.30	68,192	61,017	45,545	36,702
Louisiana Western. ....	207	2,243,892	90,041	2,166,996		502,174	292,664	31,928	902,654	65.60	319,671	272,444	157,662	327,910
Morgan's La. & T. R. R. & S. S. Co. ....	400	4,485,261	1,492,474	6,398,994		1,517,214	1,398,020	137,098	2,828,185	79.42	145,023	110,608	45,545	157,662
Texas & New Orleans. ....	475	4,598,069	1,404,746	6,344,131		1,400,767	1,802,255	103,983	2,522,605	88.10	80,094	66,285	45,134	157,662
Spokane International. ....	165	98,160	15,518	119,124		28,436	27,601	2,680	34,036	69.40	36,465	28,833	20,587	33,575
Spokane, Portland & Seattle. ....	549	590,226	177,817	839,945		88,055	102,723	9,406	236,013	72.20	271,070	204,819	147,787	314,677
Tennessee Central. ....	292	1,193,894	465,988	1,770,222		406,101	363,497	43,980	940,119	55.20	376,499	281,477	279,622	222,365
Term. R. R. Assn. of St. Louis. ....	37	.....	.....	389,551		98,533	38,643	927	112,972	71.40	111,579	11,196	125,673	216,109
East St. Louis Connecting. ....	3	.....	.....	130,163		14,657	6,721	330	55,528	61.60	49,905	47,245	38,216	7,823
St. Louis Mchts. Bridge Term. ....	9	.....	.....	1,192,307		178,219	60,802	3,156	566,144	70.40	352,871	326,961	226,459	386,152
St. Louis Transfer. ....	6	.....	.....	85,288		85,033	35,118	194	30,958	82.60	464,080	304,171	448,965	593,258
Texas & Pacific. ....	1,952	1,685,642	724,789	2,599,806		346,619	474,266	46,868	1,187,873	52.10	40,864	40,486	36,301	42,712
Tolledo, Peoria & Western. ....	247	91,556	46,763	149,851		24,050	36,503	2,000	63,509	83.10	16,396	6,396	2,693	2,515
Tolledo, St. Louis & Western. ....	454	721,014	29,542	791,319		125,562	147,552	19,717	253,828	79.70	223,536	187,503	154,576	95,441
Trinity & Brazos Valley. ....	368	298,949	23,264	333,812		58,452	49,012	3,085	120,023	89.10	16,396	6,396	2,693	2,515
Ulster & Delaware. ....	128	612,252	480,571	1,341,989		172,837	197,650	2,650	713,448	81.10	305,218	240,727	240,727	4,580
Union R. R. of Penn. ....	45	.....	.....	753,784		68,776	186,419	191	286,912	72.80	204,683	198,683	284,267	338,664
Union Pacific. ....	3,614	9,993,869	1,828,320	12,759,483		1,503,187	2,178,052	2,198	3,465,675	83.50	1,203,236	1,119,486	1,667,634	406,711
Oregon Short Line. ....	2,359	3,407,768	529,916	4,197,306		601,149	599,157	42,672	1,164,661	61.50	1,616,353	1,306,307	1,203,271	1,011,998
Oregon, Wash. R. R. & Nav. Co. ....	2,231	2,263,621	585,375	3,075,125		626,678	491,860	395,628	8,654,380	77.60	5,827,746	3,371,353	2,984,314	6,540,920
St. Joseph & Grand Island. ....	258	293,028	28,644	338,248		65,540	55,898	2,871	129,427	78.50	72,888	56,672	44,167	2,059
Utah. ....	258	2,021,706	273,545	2,449,255		506,546	445,815	24,400	1,108,788	90.30	236,836	117,524	24,071	454,283
Virginian. ....	528	1,081,345	80,830	1,271,709		229,064	335,097	94,464	4,101,847	70.70	38,583	27,963	38,929	490,064
Wabash. ....	2,472	4,088,950	852,501	5,259,295		824,638	1,036,818	110,483	1,935,257	66.00	4,712,774	3,811,879	3,258,978	3,258,978
Western Maryland. ....	804	1,230,992	100,991	1,410,126		202,730	265,642	31,949	478,722	73.90	368,223	308,223	253,902	409,605
Western Pacific. ....	1,011	1,005,524	200,133	1,281,436		196,881	190,400	28,310	418,872	80.10	2,658,490	2,128,490	2,226,406	2,226,406
Wheeling & Lake Erie. ....	511	1,171,868	74,805	1,358,446		187,159	318,783	17,111	447,889	84.66	1,394,652	619,522	951,132	2,495,188
	511	9,568,781	737,335	11,166,805		1,520,903	2,542,625	133,116	4,268,556	79.40	2,311,672	1,574,471	1,317,274	412,051

### Addition to M. D. T. Company's Shop

The Merchants' Dispatch Transportation Company is making extensive additions to its car shop at East Rochester, N. Y. Approximately 125,000 square feet of space is being provided for repairs to steel cars. The shop is to be of steel frame construction with steel sash and will be fitted with modern equipment for repairing or rebuilding steel freight cars. In addition a new blacksmith shop of 10,000 square feet floor area has recently been erected.

### Illinois Central Expense-Reduction Campaigns

A campaign to prevent the killing of cattle by trains will be started by the Illinois Central on December 1. Section hands will be instructed to be on the lookout for broken fencing, gates and cattle guards, and farmers along the line are to be asked to co-operate. Some preventive measures are already in practice but the campaign will give wide publicity to the matter.

For September, the first month of the coal-saving campaign, a saving of 30,991 tons of coal as compared with September, 1921, and 25,187 tons as compared with August, 1921, has been reported. The estimated saving is based upon the reduced consumption per unit of service and the number of service units rendered during the month. The system actually burned 380,499 tons of coal in September, 1920; 324,314 tons in August, 1921, and 294,576 in September, 1921. The report shows that a saving was made in September as compared with the same month of last year of 6 lb. per 1,000 gross ton miles in freight service, 195 lb. per 100 passenger car miles, 10 lb. per switching locomotive mile, and a total of 3,147 tons in miscellaneous service.

### Annual Dinner of Central Railway Club

The Central Railway Club held its annual dinner at the Hotel Iroquois, Buffalo, N. Y., on the evening of November 10. About 300 railroad men and guests attended, a large number coming from other cities, including a delegation in two special cars from New York. W. H. Flynn, superintendent of motive power of the Michigan Central and president of the club, introduced Hon. Charles F. Moore, who acted as toastmaster. At the conclusion of the dinner Arthur T. Baldwin, vice-president of the McGraw-Hill Company, delivered an address.

Frank C. Pickard, a former president of the club, was presented with a testimonial in recognition of his work for the organization, the presentation being made by W. F. Jones, also a past president.

Announcement was made of the election of the following officers to serve for next year: President, George Thibaut, master mechanic, Erie railroad; first vice-president, W. O. Thompson, general superintendent rolling stock, New York Central; second vice-president, J. R. Schrader, general car foreman, New York Central; third vice-president, C. L. McIlvaine, superintendent motive power, Pennsylvania, Central region. Members of executive committee; A. N. Dugan, Bronze Metal Company; J. M. Gaiser, Erie, and T. J. O'Donnell, chief joint inspector, Buffalo.

### Thirty-six Roads Had Deficits for September

Thirty-six of the 200 Class I railroads that have reported had operating deficits for the month of September, according to a preliminary compilation of railway returns for that month made by the Bureau of Railway Economics. Of these, 18 were in the Eastern district, 10 in the Southern and 8 in the Western. Fifty-six roads had operating deficits in August. The net operating income for all of the Class I roads, except the Detroit, Toledo & Ironton, which has not yet reported, was \$87,174,000, or an annual rate of 4.6 per cent on the value. For the Eastern roads the net operating income was \$31,426,000, which would be at the annual rate of 4 per cent; for the Southern roads it was \$10,251,000, or at the annual rate of 4½ per cent; and for the Western roads it was \$45,497,000, or 5.2 per cent. Expenditures for maintenance, while considerably less than those for September, 1920, showed little difference from the amounts expended in August. The expenditures in September for maintenance of ways and structures amounted to \$72,556,000, a decrease of 23.3 per cent as compared with September, 1920, and approximately \$616,000 more than for August, 1921. Expenditures for maintenance of equipment were \$103,539,000, a reduction of 22.7 per cent as compared with September, 1920. For August the maintenance of equipment amounted to \$105,482,000.

## Traffic News

At the annual banquet of the Lansing Traffic Club of Lansing, Mich., on November 3, L. W. Landman, passenger traffic manager of the Michigan Central, Chicago, discussed the railroad situation from the viewpoint of the railroads. Sherman T. Handy, chairman of the Michigan Public Utilities Commission, spoke for that body, and Joseph H. Beek, executive secretary of the National Industrial Traffic League, presented the views of shippers.

Grain shippers have been informed that the expected reduction of grain and hay rates would not become effective on November 20; and the railroads are to ask for a rehearing before the Interstate Commerce Commission, as noted elsewhere in this paper. At the conference in Washington last week the commissioners indicated that an order would be issued "if necessary." Tariffs reducing the grain rates in accordance with the commission's opinion should have been filed with the commission by November 15 to make them effective by November 20; but they were not filed.

The Southwestern Industrial Traffic League, at its annual meeting at Fort Worth, Tex., went on record as favoring the repeal of Section 15a of the Transportation Act and recommended other changes in bills in force and certain of those proposed in line with the action of the National Industrial Traffic League at Chicago on November 9 and 10. The following officers were elected: President, H. J. Fernandez, traffic manager, Chamber of Commerce, Monroe, La.; vice-president, H. D. Driscoll, manager, Oklahoma Traffic Association, Oklahoma City, Okla.; G. J. Vizard, traffic manager, Board of Commerce, Little Rock, Ark.; G. S. Maxwell, manager traffic department, Chamber of Commerce and Manufacturers' Association, Dallas, Tex.; secretary and treasurer, F. A. Leffingwell, traffic commissioner, Chamber of Commerce, Waco, Tex.; directors, C. D. Mowen, E. P. Byars, U. S. Pawkett, F. E. Potts, H. G. Struble, Edgar Moulton and G. S. Gibson.

### Coal Production

Production of soft coal dropped back to 9,344,000 tons during the week ended November 5, according to the weekly bulletin of the Geological Survey. In comparison with the week preceding this was a decrease of 1,624,000 tons, or 15 per cent. The bulletin says that three factors entered into the decrease, the observance of All Saints' Day, a reaction in demand following the settlement of the railroad controversy, and mine strikes in Indiana and elsewhere.

### Anthracite Shipments—October, 1921

The shipments of anthracite for October, as reported to the Anthracite Bureau of Information, Philadelphia, amount to 5,872,753 tons against 5,519,412 for the preceding month of September, an increase of 353,371 tons, but show a decrease over October of last year of 368,118 tons, when 6,240,901 tons were recorded. October of this year can be considered a fair average shipment when consideration is given to the fact that a number of mines in the Scranton district were idle during the month owing to the fact that they could not operate under the provisions of the Kohler Act. Operations at these mines were resumed, however, on November 2. The total shipments for the coal year beginning April 1 have amounted to 40,223,367 tons as compared with 39,720,654 tons for the corresponding period last year, a gain of 502,713 tons.

Shipments by initial carriers were as follows:

	October, 1921	September, 1921
P. & R.....	1,104,828	1,081,085
L. V.....	1,048,996	966,600
C. of N. J.....	570,189	576,875
D. L. & W.....	759,492	736,571
D. & H.....	898,376	711,199
Penna.....	492,632	426,344
Erie.....	618,034	631,882
N. Y. O. & W.....	126,925	123,742
L. & N. E.....	253,311	265,114
	5,872,783	5,519,412

## Commission and Court News

### Interstate Commerce Commission

The Interstate Commerce Commission has announced the re-opening of the New England rate division case for oral argument at Washington on November 29.

The commission has suspended until March 15 a supplement to Agent W. J. Kelly's tariff which proposes to establish a commodity rate of 32½ cents on sewer pipe from Cincinnati, Ohio; Lexington, Ky.; Louisville, Ky.; Maysville, Ky., and certain related points to Norfolk and certain other Virginia cities in lieu of the existing sixth class rate of 42½ cents.

The commission has suspended until March 15, the operation of schedules published in supplements to Agents E. B. Boyd's and F. A. Leland's tariffs which propose to prohibit the acceptance of shipments of petroleum by the Missouri, Kansas & Texas for routing via the Chicago & Eastern Illinois to certain destinations in Indiana and Michigan.

### Interlocking Officers and Directors Authorized

The Interstate Commerce Commission has issued a number of orders authorizing railroad officers and directors to hold positions with more than one railroad. Under Section 20-a of the interstate commerce act there is a prohibition against holding the position of officer or director of more than one carrier after December 31 of this year, except as authorized by the commission. Large numbers of applications for this permission have been filed with the commission and are coming in every day. It is understood the commission will shortly announce a hearing to consider some protests which have been filed against the applications. The orders so far issued authorize the officers and directors of the Chicago & Western Indiana to hold similar positions with the Belt Railway of Chicago, officers and directors of the Chicago, Milwaukee & Gary to hold similar positions with the Apalachicola Northern, officers and directors of the Waterloo, Cedar Falls & Northern to hold similar positions with the Kansas City Northwestern, and officers and directors of the Manufacturers Railway of St. Louis to hold similar positions with the St. Louis & O'Fallon.

### Court News

#### Propensity of Mules to Kick

The Alabama Supreme Court holds, in an action for damages to mules in transit, that the disposition of mules to kick is too well known to be ignored by courts. Having regard, therefore, to the inherent nature and propensities of these animals, the mere fact that several individuals of the carload got down and received injuries does not authorize a finding of negligence on the part of the railroad. The rule of *res ipsa loquitur* cannot be here applied.—*A. C. L. v. Carroll Mercantile Co. (Ala.)*, 89 So. 509.

#### Railroad Agreeing to Reserve Steamship Space

##### Not Liable for Failure of Broker to Reserve It

A railroad company, receiving shipments to the coast over its line, was accustomed to ascertain from steamship companies whether they could book the shipments, and the clearance and rates. If accepted, it sent confirmations to its representatives on the coast, who exchanged confirmations with the steamship companies. The railroad company agreed with an exporter who had failed to get space, to reserve space from San Francisco to Japan for a cargo of pig iron at \$15 a ton. Finding it could not secure space directly, it booked it through brokers at this rate, which was cheaper than that asked by the steamship companies. The brokers failed to reserve space. The Circuit Court of Appeals, Ninth Circuit, holds that the railroad company was not liable to the exporter for breach of contract, the agreement being one of agency, although the railroad did not disclose to the ex-

porter the ship or line with which it had booked the freight, the name of which it had been unable to get from the brokers.—*Baldwin Shipping Co. v. Southern Pac. Co.*, 274 Fed. 374.

### Converting Public Track to a Private

#### One Is Not Discrimination

Missouri Rev. St. 1919, §9975, provides a penalty for discrimination in charges or facilities between (1) transportation companies and individuals, or (2) in transportation of freight between (2) "commission merchants or other persons engaged in the transportation of freight and individuals." The Springfield Court of Appeals holds that the statute does not authorize a penalty where a railroad converts a public team track to a private one for the use of an individual, compelling another individual to go to a more distant track. The statute does not cover cases of discrimination between individuals. Moreover, neither of the individuals in question, a lumber dealer and a sand dealer, was a transportation company, and hence was not within the first classification of the statute. The second classification "commission merchants or other persons" was held to include only commission merchants and the class of shippers similar to commission merchants.—*Tacker v. St. Louis-San Francisco (Mo. App.)* 233 S. W. 512.

### United States Supreme Court

#### Director General Upheld

The Supreme Court of the United States, reversing the judgment of the Mississippi Supreme Court, holds that Order No. 18 of the Director General, prohibiting the institution of suits against railroads under federal control in the court for any district other than that in which the plaintiff had resided or in which the alleged cause of action arose, was within the powers conferred by Congress on the President and by him on the Director General, and is valid.—*Alabama & Vicksburg v. Journey*. Decided November 7, 1921.

#### Reparation for Discrimination

##### in Allotment of Coal Cars

The Supreme Court of the United States has affirmed *Weber v. Pennsylvania*, 263 Fed. 945, and 269 Fed. 111, sustaining an award by the Interstate Commerce Commission of restitution to a coal mine owner against a railroad for discrimination in the distribution of coal cars in times of shortage. The discrimination condemned was the special allotment to the Berwind-White Coal Company of 500 cars daily, and the sale to it and to other companies of a large number of cars in times of car shortage.—*Pennsylvania v. Weber*. Decided November 7, 1921.

#### Reasonable Rates on Tap Lines

The Supreme Court of the United States has sustained the order of the Interstate Commerce Commission, 53 I. C. C. 475, finding that an allowance of more than \$3 a car for hauling from Union Sawmill plant to Dollar Junction, would result in unjust discrimination. The plaintiff, the Louisiana & Pine Bluff, contended that it should be allowed to receive the division of 1½ cents per 100 pounds, or about \$9 a car, on the ground that its haul from the Union Sawmill plant to Dollar Junction was longer than three miles. If hauled direct, the cars would travel only 2.41 miles, but as they were taken first in the opposite direction to a track scale located on and controlled by the trunk line, they traveled 3.42 miles. The Supreme Court says, in part, by Mr. Justice Brandeis: "The Commission finds that, 'The evidence does not show that it is necessary that the shipments be weighed by the tap line rather than by the trunk line'; and, 40 I. C. C. 470, 471, that allowing the larger division on these facts would place the plaintiff in a more advantageous position than any other tap line in that territory performing a similar service and would 'open the way in the case of many tap lines for a relocation of their track scales so as to require a long back haul, and in that way to lay a basis for divisions or allowances very materially in excess of those fixed by the Commission for the distance covered by a direct movement from the mill to the junction.' In other words, divisions that would operate as rebates."—*Louisiana & Pine Bluff v. United States*. Decided November 7, 1921.

## Foreign Railway News

### Russian Shipyard to Repair Locomotives

LONDON.

It is reported that the Balto-British Shipyard Company, Reval, Russia, has undertaken the repair of one thousand locomotives for the Russian railways during the next five years.

### German Locomotives for Spain

LONDON.

It is reported that four German-built locomotives, each of a total weight of 96 tons, have been delivered at Port Bon, Catalonia, Spain, for use on the Madrid, Saragossa & Alicante railway. Twenty-one similar engines are on order.

### Railway Accidents in Great Britain

LONDON.

A report recently issued by the Ministry of Transport states that 991 persons were killed in railway accidents in the year 1920, as compared with 932 in the year 1919. There was a total of 25,933 injured in the year 1920, as against 23,983 in 1919, an increase of 1,950.

### New Railway in Kenya Colony

A new railway line is to be built from Nakuru on the Uganda Railway, Kenya Colony, Africa, to Turbo, a distance of 148 miles, according to the Times (London) Engineering Supplement. The construction work will be done by British concerns and will total in the neighborhood of \$10,000,000. This line, it is said, will eventually be an important feeder to the Cape-to-Cairo line, when it is completed. The prime purpose of the new line will be to provide transportation for a large agricultural community.

The route chosen will make this line at its highest point 9,135 ft. above sea level. The maximum gradient will be 1.5 per cent and the maximum curvature about 10 deg. Fifty-pound rails will be used and maximum train loads will vary from 204 to 428 long tons. The gage of the new line will probably be one meter.

### Polish Government Places Orders

#### for Locomotives and Cars

The Polish ministry of railways has placed orders with Polish firms for 2,970 locomotives, 7,800 passenger coaches, and 70,000 freight cars, according to a report published in the Warsaw Polish Courier and transmitted to Commerce Reports by Consul General L. J. Keena of Warsaw.

The orders were distributed as follows: First Locomotive Construction Company, Chrzanow, 1,200 locomotives; Locomotive Construction Company, Warsaw, 360 locomotives; H. Cegielski Company, Posen, 1,410 locomotives and 4,400 coaches and freight cars; Wagon Car Factory, Ostrow, 2,800 coaches and 18,000 freight cars; Lipop, Rau and Loewenstein, Warsaw, 3,000 coaches and 20,000 freight cars; Boiler Manufacturing Company, Ostrowiec, 20,000 freight cars.

The contracts for locomotives run to 1932, and the contracts for passenger coaches and freight cars to 1922. Nearly 200 locomotives are to be delivered during the first two years.

### Rumanian Railway Reorganization

LONDON.

It is reported that a grant of 400,000,000 lei (approximately \$44,081,600 at the normal rate of exchange) has been made by the Rumanian government to the Ministry of Communications for alterations and improvements in transport services in Rumania. The greater part of this grant is to be devoted to the repair of the permanent way and material and to the enlargement and completion of railway workshops. Practically nothing has been done to replace the bridges destroyed

during the war, owing to which many branch and some main lines have been out of service. The rolling stock also is in a very bad condition, the passenger coaches being generally without windows and upholstery. Ten million lei (approximately \$1,927,040 at the normal rate of exchange) has been allotted to the standardization of railway lines in the newly acquired provinces of Bessarabia. The existing lines are built on the broad gage system used in Russia, to which Bessarabia formerly belonged.

### Car Exports in September

Eleven passenger cars and 488 freight cars, valued at \$55,000 and \$670,213 respectively, were exported from this country in September. Detailed figures by countries, as compiled by the Bureau of Foreign and Domestic Commerce follow:

Countries	Passenger		Freight and Other		Parts of cars
	Number		Number		
France .....	..	..	..	..	\$4,936
Norway .....	..	..	..	..	80
Switzerland .....	..	..	..	..	456
England .....	..	..	..	..	1,200
Ireland .....	..	..	..	..	87,631
Canada .....	..	..	21	\$18,062	2,294
Costa Rica .....	..	..	..	..	1,433
Guatemala .....	..	..	..	..	2,981
Honduras .....	..	..	..	..	380
Salvador .....	..	..	..	..	24,517
Mexico .....	11	\$55,000	73	58,305	542
Jamaica .....	..	..	..	..	188
Trinidad and Tobago .....	..	..	..	..	6,776
Cuba .....	..	..	140	351,806	3,493
Dominican Republic .....	..	..	150	58,500	4,520
Argentina .....	..	..	..	..	4,368
Brazil .....	..	..	..	..	196
Chile .....	..	..	..	..	150
Colombia .....	..	..	..	..	397
Ecuador .....	..	..	..	..	1,970
Paraguay .....	..	..	..	..	23,800
China .....	..	..	100	181,000	7,764
Kwantung, leased territory .....	..	..	..	..	25
Straits Settlements .....	..	..	..	..	29,998
Hongkong .....	..	..	..	..	39
Japan .....	..	..	4	2,540	4,373
Australia .....	..	..	..	..	683
Philippine Islands .....	..	..	..	..	5,313
British South Africa .....	..	..	..	..	..
Portuguese Africa .....	..	..	..	..	..
Total .....	11	\$55,000	488	\$670,213	\$220,503

### Track Material Exports in September

The value of exports of track spikes, steel rails, switches, frogs, etc., and structural iron and steel increased greatly in September over the preceding month. The detailed figures by countries as compiled by the Bureau of Foreign and Domestic Commerce, follow:

Countries	Railroad spikes, Pounds	Rails of steel, Tons	Switches, frogs, splices, bars, etc., Dollars		Structural iron and steel, Tons
Belgium .....	..	..	5,415	..	..
France .....	..	..	10,990	..	599
Norway .....	..	..	544	..	..
Spain .....	..	..	4,027	..	..
England .....	..	769	1,388	12	..
Scotland .....	..	..	16,388	..	..
Ireland .....	..	509	..	..	..
Canada .....	8,993	2,539	96,024	2,399	..
Costa Rica .....	16,000	60	358	..	..
Guatemala .....	..	..	989	..	..
Honduras .....	47,100	646	525	71	..
Panama .....	..	..	2,877	6	..
Salvador .....	..	..	..	29	..
Mexico .....	121,330	353	8,220	377	..
Jamaica .....	..	..	39	..	..
Trinidad and Tobago .....	..	..	..	2	..
Cuba .....	10,000	..	12,918	932	..
Dutch West Indies .....	..	2	250	35	..
Dominican Republic .....	84,360	446	3,863	15	..
Argentina .....	..	..	747	..	..
Brazil .....	..	..	90,556	..	..
Chile .....	..	..	141	..	..
Colombia .....	30,800	448	153	7	..
Ecuador .....	7,000	..	2,097	28	..
Peru .....	..	..	5,776	161	..
Venezuela .....	2,000	20	1,162	46	..
China .....	132,000	12,742	61,150	23	..
Kwantung, leased territory .....	..	630	16,000	..	..
British India .....	..	10	53	2,567	..
Hongkong .....	..	151	1,115	..	..
Japan .....	9,325	141	101,838	3,975	..
Australia .....	..	..	..	72	..
New Zealand .....	..	..	45	..	..
Philippine Islands .....	4,106	976	4,635	175	..
British South Africa .....	..	..	17	..	..
Total quantity .....	473,014	20,442	..	11,531	..
Total value .....	\$18,135	\$895,234	\$450,300	\$989,092	..

## Equipment and Supplies

### Locomotives

THE SEWELL VALLEY, reported in the *Railway Age* of November 12, as inquiring for one Mikado type locomotive, has ordered this locomotive from the Lima Locomotive Works.

### Freight Cars

THE GREAT NORTHERN is inquiring for 500 refrigerator cars and 1,000 box cars.

WHITAKER-GLESSNER COMPANY, Wheeling, W. Va., is inquiring for five center dumping hopper cars, of 55-tons capacity.

THE WABASH has given a contract to the Western Steel Car & Foundry Company for the repair of 250 hopper cars.

THE LEHIGH & NEW ENGLAND is asking for prices on 50 steel underframe, drop end gondola cars, of 50-ton capacity.

THE PERE MARQUETTE is asking for prices on from 500 to 2,000 steel underframe, double sheathed box cars, of 40-tons capacity.

THE ALABAMA, TENNESSEE & NORTHERN, reported in the *Railway Age* of October 8, as inquiring for 215 freight cars, has given an order to the Mt. Vernon Car Manufacturing Company for 300 standard freight cars.

THE CHICAGO, BURLINGTON & QUINCY, which recently authorized the purchase of new equipment, as mentioned in the *Railway Age* of November 12, has issued inquiries for from 1,000 to 2,000 freight cars and also has given a contract to the Western Steel Car & Foundry Company for repair work on 300 of its gondola cars.

THE ILLINOIS CENTRAL has awarded a contract for 350 40-ton refrigerator cars to the General American Car Company and not the General American Tank Car Company as incorrectly reported in the *Railway Age* of November 12 (page 959). The Illinois Central is now inquiring for prices on 500 46-ft. gondola cars with 12 drop doors and for 2,000 46-ft. gondola cars with 8 drop doors.

### Iron and Steel

MITSUI & Co., New York, are inquiring for 300 tons of 60-lb. rail for export to Japan.

THE IMPERIAL JAPANESE GOVERNMENT RAILWAYS through Suzuki & Company, New York, have ordered 66,000 tons of 60 and 75 lb. rail, from the Consolidated Steel Corporation.

THE NEW YORK CENTRAL will receive bids until 12 o'clock noon November 25, for the requirements of the New York Central and subsidiary companies of rails, not to exceed 200,000 gross tons of open hearth steel rail of 120, 115, 105, 90 and 80 lb. Dudley sections and 100, 90 and 85 lb. ASCE sections, plus five per cent of second quality rails, and with the necessary angle bars.

### Miscellaneous

THE NORFOLK & WESTERN will receive bids at Roanoke, Va., until 12 o'clock, noon, November 30, for two lots of open hearth steel rails, one for 24,780 tons and the other for 15,220 gross tons; parts for electrical apparatus and 200 rolled steel wheels.

THE NEW YORK CENTRAL will receive bids until 12 o'clock, noon, December 1, for its present requirements on structural steel and castings for repairs to bridges on the Syracuse and Pennsylvania divisions; also galvanized fence and fence posts; trailer wheels and axles for repairs to 80 and 85 ft. turntable; splice bars for 80 and 100-lb. rail; rigid manganese frogs, and track switches.

## Supply Trade News

The United States Cast Iron Pipe & Foundry Company, Burlington, N. J., has opened a new office at 811 Dixie Terminal building, Cincinnati, Ohio. P. T. Laws, assistant works manager, now has his headquarters at the new office and Harold G. Henderson is in charge of sales from this office.

The final details of the merging of the Pullman Company and the Haskell & Barker Car Company, it is reported, were agreed on by committees representing both companies at Chicago on November 14. These committees are expected to report to their respective directorates within the next week and it is expected that the directors will then call for a special meeting to vote approval of the plan. The plan provides for the giving of 3 shares of the stock of the Pullman Company in exchange for 4 shares of Haskell & Barker.

Henry P. Hoffstot has been elected vice-president of the Pressed Steel Car Company in addition to his duties as president of the Koppel Industrial Car & Equipment Company. He was formerly manager of sales, central district, of the Pressed Steel Car Company, before assuming duties as president of the Koppel Company. C. W. Wrenshall, general superintendent and acting general manager, has been appointed general manager of the Pressed Steel Car Company and W. A. Chamberlain, formerly auditor, has been appointed comptroller, all with headquarters at Pittsburgh, Pa. C. E. Church, secretary and assistant treasurer, has been appointed secretary and treasurer with office at New York.

### Obituary

James Brown Rider, vice-president and general manager of the Pressed Steel Car Company and the Western Steel Car & Foundry Company with headquarters at Pittsburgh,



J. B. Rider

Pa., who died on November 2, as was noted in the *Railway Age* of November 5, was born at Morrison's Cove, Blair County, Pa., on September 10, 1879. He entered the service of the Pennsylvania Railroad in 1895, and remained with it until 1899, acting successively as messenger boy, shop order clerk, invoice clerk and stenographer. In 1899 he became connected with the Pressed Steel Car Company as stenographer and clerk to the general manager, being advanced to the position of assistant to the

vice-president in July, 1905. He was appointed general manager in July, 1909, and made a member of the board of directors in January, 1913. Mr. Rider was appointed general manager of the Western Steel Car & Foundry Company in August, 1913, and in December, 1915, he was elected a vice-president of the Pressed Steel Car Company and Western Steel Car & Foundry Company, with headquarters at Pittsburgh; he continued to perform the duties of general manager in charge of operations. Mr. Rider was also vice-president of the American Steel Company of Cuba.

GRAIN (in sacks) is now being shipped from British Columbia to Japan. Seven thousand tons of Canadian wheat have been booked for November shipment.

## Railway Construction

**ATCHISON, TOPEKA & SANTA FE.**—This company contemplates the construction of 3 oil storage tanks at Argentine, Kan. The same company will also install an air compressor in its main power house at Cleburn, Tex.

**CHICAGO, BURLINGTON & QUINCY.**—This company has awarded a contract to the Materne Manufacturing Company, St. Louis, for the installation of a heating and washout system in its new engine house at Centralia, Ills.

**CHICAGO, OTTAWA & PEORIA.**—This company has been requested by the city of Ottawa, Ill., to abandon its bridge over the Fox River at Ottawa and to join the city in the rebuilding the city's bridge, which runs parallel to that of the railroad, the proposed city-railroad bridge to be constructed of a width equal to that of the street. This company has objected and the matter has now been brought before the Illinois Commerce Commission.

**CHICAGO, UNION STATION.**—This company will accept bids until November 17 for 2,600 sq. yd. of concrete track slabs.

**MISSOURI PACIFIC.**—This company, which was noted in the *Railway Age* of October 22 (page 804), as contemplating the construction of two brick car repair sheds, 46 ft. by 500' ft. at St. Louis, Mo., has awarded the contract for this work to Joseph E. Nelson & Sons, Chicago.

**NEW YORK, NEW HAVEN & HARTFORD.**—This company has contracted with the American Creosoting Company, Inc., Louisville, Ky., and not the American Creosoting Company, New York, as stated incorrectly in our issue of November 5, page 911, for the treatment of its cross ties and other timber in a plant to be built by the creosoting company adjacent to the Cedar Hill terminal of the railroad at New Haven, Conn.

**ST. LOUIS-SAN FRANCISCO.**—This company is accepting bids for the construction of a one-story express and baggage building at Okmulgee, Okla.

### Another Kind of Train Order

31 9/8/86  
Day & Eng 1 R  
Run wild between State line and Jersey City  
until eight o'clock tomorrow am  
following Engine 102 and keep out the way  
of Express train with Engine 101 which will  
leave State line at seven o'clock for Jersey City  
Engine 101 after arriving at Little Falls with  
train thirty five (35) tonight will run wild to  
Pompton Junction and Engine seven (7) will  
then return from Pompton Junction to Little  
Falls, Engine 103 will leave Jersey City  
at six o'clock tomorrow morning for Orange  
Engine five (5) between four and five o'clock  
tomorrow morning will go from Pompton  
Junction to Ridgewood keep out of their way  
of all of the above wild trains and engines.  
Engine 101 will couple in with you & keep  
you from Jersey City to Cooper  
also show this to Engineer 101  
at his order

32 OK Freeman

From Erie Railroad Magazine

## Railway Financial News

**BANGOR & AROOSTOOK.**—Asks Authority to Abandon Line.—This company has applied to the Interstate Commerce Commission for a certificate of convenience and necessity authorizing the abandonment of its line from Brownville Junction to Katahdin Iron Works, Me., 9.4 miles.

**CAROLINA, CLINCHFIELD & OHIO.**—Asks Loan from Revolving Fund.—This company has applied to the Interstate Commerce Commission for a loan of \$6,000,000 for five years from the revolving fund, to enable it to meet obligations maturing on January 1, 1922, consisting of \$5,000,000 of 5 per cent Elkhorn first mortgage gold notes and a note for \$1,000,000 to the Secretary of the Treasury.

**CHICAGO & EASTERN ILLINOIS.**—Sale of Brazil Branch Postponed.—The public sale of the line between Mokena, Ill., and Brazil, Ind., 130 miles, has been postponed until December 16. See *Railway Age*, April 8, 1921, page 913.

**COLORADO, WYOMING & EASTERN.**—Foreclosure Proceedings.—The Equitable Trust Company, as trustee of the general mortgage, has notified the bondholders of its intention to begin foreclosure proceedings and to ask for the appointment of a receiver in the Federal District Court of Wyoming. The general mortgage trustee states that it is informed that the company is in default on July 1 interest on both of the senior bond issues, for which reason the trustee has declared principal and accrued interest on the general mortgage bonds due and payable and has made a demand upon the company for payment. It anticipates that the company will be entirely unable to make such payment, hence the intention to begin foreclosure and ask for a receiver. The trustee expects that foreclosure of the other two mortgages will be sought at once.

The Colorado, Wyoming & Eastern operates between Coal-mont, Colo., and Laramie, Wyo., 111 miles. The company was organized in 1914 and took over the property of the Laramie, Hahn's Peak & Pacific, subject to mortgages. Its outstanding bond issues are \$240,000 Laramie, Hahn's Peak & Pacific first 6s, \$550,000 C. W. & E. first and refunding 6s and \$1,600,000 C. W. & E. general mortgage income 6s. It has \$2,000,000 6 per cent preferred and \$2,300,000 common stock.

**FORT WORTH & DENVER CITY.**—Extend Bonds.—J. P. Morgan & Co. and the First National Bank have underwritten the extension of the \$8,176,000 first mortgage 6 per cent bonds of this company, a subsidiary of the Colorado & Southern, which mature December 1. Holders are offered the right to extend the bonds for 40 years at 5½ per cent and to receive a cash payment of \$40 on each \$1,000 bond, but the extended bonds are to be subject to redemption as a whole at 105 and interest on and for five years following January 1, 1935, and at a price reduced by 1 per cent of par for each five-year term thereafter until a redemption price of 101 is reached, which governs until September 30, 1961. Holders of the maturing bonds who do not wish to extend may sell their bonds to the bankers at 100 and accrued interest on or prior to December 1, 1921. The plan has been approved by the Interstate Commerce Commission.

**NEW ORLEANS & NORTHEASTERN.**—Annual Report.—The income statement for the year ended December 31, 1920, compares with the previous year as follows:

	1920	1919
Operating revenues (March 1-December 31).....	\$6,344,097	.....
Operating expenses (March 1-December 31).....	5,545,481	.....
Net revenue from operations.....	798,616	.....
Taxes.....	383,079	.....
Operating income (March 1-December 31).....	512,424	.....
Standard return (January and February; full year 1919).....	713,256	\$1,204,992
Non-operating income.....	702,607	42,324
Gross income.....	1,415,863	1,247,316
Interest on funded debt.....	392,325	392,325
Total deductions from gross income.....	584,938	524,031
Balance of income over charges.....	830,925	723,285
Dividend of 6 per cent on common stock.....	360,000	360,000
Additions and betterments charged to income.....	821	.....
Balance carried to profit and loss.....	470,104	363,285

The operating revenues and expenses in detail and the principal traffic statistics for 1920 compare with 1919 as follows:

OPERATING REVENUES		
	1920	1919
Freight .....	\$5,587,059	\$4,181,370
Passenger .....	1,333,771	1,481,530
Total operating revenues .....	\$7,743,490	\$6,446,802
OPERATING EXPENSES		
Maintenance of way and structures .....	\$1,263,015	\$1,189,612
Maintenance of equipment .....	1,608,488	1,416,892
Traffic .....	148,541	98,137
Transportation .....	3,379,776	2,984,737
General .....	214,486	175,749
Total operating expenses .....	\$6,678,468	\$5,925,279
Net revenue from operations .....	1,065,022	521,523
Taxes .....	451,982	483,753
Total operating income .....	611,299	36,299
PASSENGER TRAFFIC		
Number of passengers carried .....	1,028,580	1,099,974
Number of passengers carried one mile .....	44,450,159	55,605,312
Average distance hauled per passenger—miles .....	43.22	50.55
Average receipts per passenger per mile—cents .....	3.00	2.66
FREIGHT TRAFFIC		
Number of revenue tons carried .....	3,611,520	3,248,178
Number of tons carried one mile .....	545,249,253	462,900,258
Average distance hauled per ton—miles .....	150.98	142.51
Average receipts per ton per mile—cents .....	1.02	0.90

**PERE MARQUETTE.**—Asks Authority to Abandon Line.—This company has applied to the Interstate Commerce Commission for authority to abandon four branch lines; its Freeport branch, 6.23 miles; the Buchanan branch from Benton Harbor to Buchanan, Mich., 25.69 miles; the branch from Haynor to Sheridan, Mich., 19.64 miles; and also the line from Big Rapids to White Cloud, Mich., 19.67 miles.

**SOUTHERN.**—Asks Authority to Nominally Issue Bonds.—This company has applied to the Interstate Commerce Commission for authority to nominally issue \$5,225,000 of development and general mortgage 4 per cent gold bonds to be held in the treasury.

**WEST JERSEY & SEASHORE.**—Annual Report.—The income account for the year ended December 31, 1920, compares with the previous year as follows:

	1920	1919
Compensation accrued under federal control (January and February, 1920; year 1919) .....	\$159,424	\$952,682
Net railway operating deficit (March-December 31) Def. ....	301,282	.....
Non-operating income .....	281,960	259,751
Gross income .....	140,102	1,212,433
Interest on funded debt .....	224,345	228,683
Total deductions from gross income .....	503,801	513,573
Net income .....	Def. 363,700	698,859
Appropriations to sinking fund .....	99,445	96,670
Dividend appropriations (five per cent in 1919) .....	.....	579,313
Balance transferred to profit and loss (debit in 1920; credit in 1919) .....	463,144	22,877

The operating revenues and expenses in detail and the principal traffic statistics for 1920 compare with 1919 as follows:

OPERATING REVENUES		
	1920	1919
Freight .....	\$4,606,026	\$3,543,800
Passenger .....	8,316,106	7,538,322
Total operating revenues .....	\$13,914,442	\$11,971,021

OPERATING EXPENSES		
	1920	1919
Maintenance of way and structures .....	\$3,062,907	\$2,314,978
Maintenance of equipment .....	3,035,466	2,443,484
Traffic .....	139,867	98,811
Transportation .....	7,333,856	5,961,368
General .....	322,647	260,165
Total operating expenses .....	\$13,999,620	\$11,145,020
Net revenue from railway operations .....	Def. 85,177	826,001
Railway tax accruals .....	571,832	578,875
Railway operating income .....	Def. 657,366	245,968
Net railway operating income .....	Def. 1,039,063	19,959
PASSENGER TRAFFIC		
Mileage operated .....	359	361
Number of passengers carried .....	15,195,454	14,762,658
Number of passengers carried one mile .....	411,169,161	394,142,286
Average miles each passenger was carried .....	27.06	26.70
Average revenue per passenger per mile (cents) .....	2.023	1.919
FREIGHT TRAFFIC		
Number of revenue tons carried .....	4,209,450	4,285,434
Number of revenue tons carried one mile .....	134,734,562	128,209,458
Number of revenue tons carried one mile, per mile of road .....	375,096	354,974
Average miles each ton was carried .....	32.01	29.92
Average net revenue per ton per mile (cents) .....	0.297	0.617

### Railroad Administration Settlements

The Railroad Administration has prepared a statement showing the progress made in settling its accounts with the railroads as of November 1. Up to that date the total amount of claims presented by the carriers on final settlement aggregated \$882,429,605, representing 194,523 miles of road, or 80.65 per cent of the mileage under federal control. If the remaining roads file claims on the basis of those heretofore filed, it is estimated that the total amount of claims will aggregate about \$1,100,000,000. Included in the companies that have not filed their final claims are the Pennsylvania and the New York Central. The amount of claims on final settlement adjusted up to November 1 aggregates \$413,412,415, and the amount of cash paid in settlement of these claims aggregates \$127,429,839, or 30.8 per cent of the amount claimed. The claims settled represent 100,603 miles of road.

Director General James C. Davis of the Railroad Administration predicts that the entire business of the Railroad Administration will be wound up by December 31, 1923.

The Railroad Administration reports final settlements with the Pere Marquette for \$750,000 and with the Marquette & Bessemer Dock & Navigation Company for \$60,000.

### Dividends Declared

**Alabama Great Southern.**—Common, 3½ per cent, semi-annually, payable December 29 to holders of record November 30; preferred, 3½ per cent, semi-annually, payable February 17 to holders of record January 20.

**Catawissa.**—First and second preferred, \$1.25, payable November 19 to holders of record November 3.

**Delaware & Bound Brook.**—2 per cent, quarterly, payable November 21 to holders of record November 11.

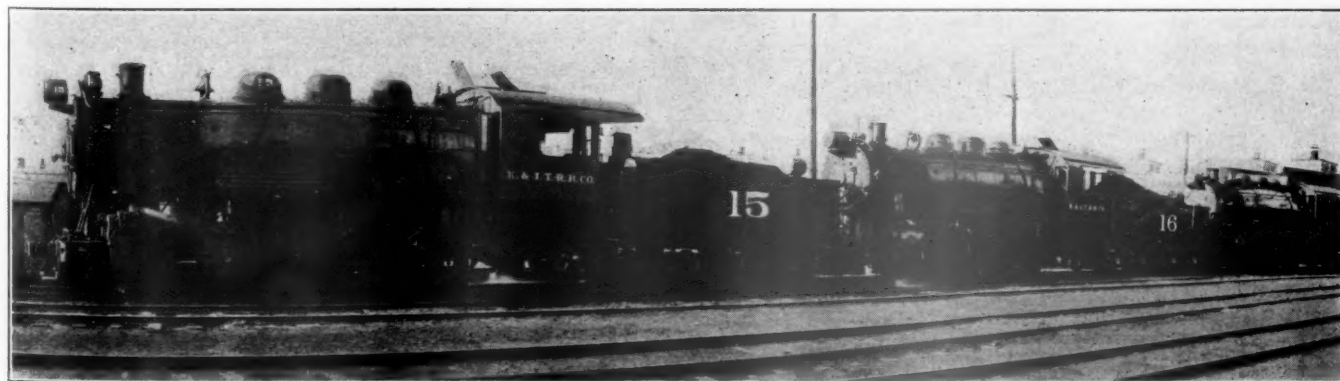
**Mobile & Birmingham.**—Preferred, 2 per cent, semi-annually, payable January 1 to holders of record December 1.

**North Pennsylvania.**—\$1, payable November 25 to holders of record November 11.

**Pittsburgh, Bessemer & Lake Erie.**—Preferred, \$1.50, payable December 1 to holders of record November 15.

**Southern Pacific.**—1½ per cent, quarterly, payable January 2 to holders of record November 30.

**Union Pacific.**—Common, 2½ per cent, quarterly, payable January 3 to holders of record December 1.



Eight-Wheel Switchers on the Kentucky & Indiana Terminal

Five new locomotives enabled the Kentucky & Indiana Terminal to handle the largest number of cars in their history without an embargo for the past three years. These locomotives are of 49,700 lb. tractive effort, weigh 208,700 lb. on drivers, have 24 in. by 28 in. cylinders, 51 in. driving wheels, 2,443 sq. ft. heating surface, 41.7 sq. ft. grate area and carry 185 lb. boiler pressure.

## Railway Officers

### Financial, Legal and Accounting

**F. H. Jeffrey** has been appointed auditor of station accounts of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, succeeding **W. W. Scannel**, who has resigned.

### Operating

**F. W. Cowley**, passenger conductor of the Michigan Central, has been promoted to assistant trainmaster, with headquarters at St. Thomas, Ont.

**A. C. Becton** has been appointed general agent in the operating department, of the Missouri, Kansas & Texas, with headquarters at Fort Worth, Texas.

**J. A. Mathewson**, superintendent of the St. Louis Merchants Bridge Terminal, has been appointed general manager of the Terminal Railroad Association of St. Louis.

**H. R. Hughes**, chief clerk to the assistant general manager of the Southern Pacific, has been appointed trainmaster of the Los Angeles division with headquarters at Indio, Cal.

### Traffic

**L. H. Correll** has been appointed freight traffic agent of the Nashville, Chattanooga & St. Louis, with headquarters at Memphis, Tenn.

**E. H. Brinkmeyer** has been appointed commercial agent of the Tennessee Central with headquarters at St. Louis, effective November 15.

**F. M. Sublette**, commercial agent of the Gulf, Mobile & Northern, with headquarters at Mobile, Ala., has been transferred to Louisville, Ky. He is succeeded at Mobile by **R. P. Tallman**.

**George E. Bunting**, Australasian manager for the Canadian Government Merchant Marine, Ltd., will also act as general traffic agent for the Canadian National Railways with headquarters at Auckland, New Zealand.

**B. A. Rodgers**, general agent of the Kansas City Southern, with headquarters at St. Louis, Mo., has been promoted to assistant general freight agent, with headquarters at Kansas City, Mo. He is succeeded at St. Louis by **C. W. Wheeler**.

### Mechanical

**M. H. Haig** has been appointed master mechanic of the Pecos division of the Atchison, Topeka & Santa Fe, with headquarters at Clovis, N. M., succeeding **W. D. Hartley**, who has been transferred to the New Mexico division.

**E. E. Machovec**, master mechanic of the Atchison, Topeka & Santa Fe, with headquarters at Argentine, Kan., has been promoted to acting mechanical superintendent of the Northern Lines, Western District, with headquarters at La Junta, Colo., succeeding **J. R. Sexton**, who has been granted an indefinite leave of absence due to ill health.

**M. C. M. Hatch**, whose appointment as mechanical engineer of the Missouri, Kansas & Texas, with headquarters at Parsons, Kan., was announced in the *Railway Age* of November 5 (page 914), was born at Chelsea, Mass., on March 14, 1882. After two years attendance at the Massachusetts Institute of Technology, and two years at the University of California, he entered railroad service in June, 1903, working in the Southern Pacific shops at West Oakland, Cal., and in the testing and signal departments for about 18 months and about six months in the Atchison, Topeka & Santa Fe shops at Needles, Cal., and San

Bernardino. In June, 1905, he became a draftsman in the motive power department of the Boston & Maine, and in December, 1906, he was promoted to chief draftsman of that road, which position he held until November, 1911, when he was appointed engineer of tests of the New England Lines. In June, 1912, he was appointed superintendent of locomotive fuel service of the Delaware, Lackawanna & Western, which position he resigned in February, 1917, to become assistant to the president of the Locomotive Pulverized Fuel Company. He held this position until January, 1920, when he left this company to become a representative of the Railway & Industrial Engineers. He re-entered railroad service in April, 1921, as assistant mechanical engineer of the Missouri, Kansas & Texas, with headquarters at Parsons, Kan., which position he was holding at the time of his recent promotion.

### Engineering, Maintenance of Way and Signaling

**James F. Deimling** has been appointed chief engineer of the Michigan Central with headquarters at Detroit, effective November 15, succeeding **George K. Webb**, deceased.

**George H. Harris**, engineer maintenance of way of the Michigan Central, with headquarters at Detroit, Mich., has been promoted to assistant chief engineer, with the same headquarters, succeeding **J. F. Deimling**, promoted.

### Obituary

**Axel S. Vogt**, formerly mechanical engineer of the Pennsylvania, died on November 11 of heart failure.

**Albert S. Johnson**, general manager of the Terminal Railroad Association, with headquarters at St. Louis, Mo., whose death was mentioned in the *Railway Age* of November 12 (page 964), was born at Seymour, Ind., on July 21, 1871. He entered railroad service in November 8, 1889, as a messenger boy in the St. Louis freight office of the Terminal Railroad Association, and he had been with that company ever since. He was appointed freight agent on October 13, 1903, was promoted to superintendent with headquarters at St. Louis on April 23, 1913, and was again promoted to assistant general manager with the same headquarters on December 13, 1917.



A. S. Johnson

During the period of government control, Mr. Johnson served as terminal manager of the St. Louis district, and when the roads were returned to private control, he was elected general manager, which position he was holding at the time of his death on November 7.

**James D. Collinson**, formerly general master mechanic of the Atchison, Topeka & Santa Fe, died at his home in Houston, Tex., on November 9. Mr. Collinson was born in Manchester, England, on January 21, 1849. He first entered railroad service in the mechanical department of the Chicago, Milwaukee & St. Paul. In 1889 he left to become general foreman of the shops of the Atchison, Topeka & Santa Fe at Topeka, Kan., was thereafter promoted successively to master mechanic at Raton, N. M., and later transferred to Fort Madison, Iowa. He became superintendent of motive power of the Gulf, Colorado & Santa Fe in 1896, assistant superintendent of motive power of the main line, with headquarters at Topeka, in 1900, and general master mechanic in 1901, during which year he retired from railroad service.